Pinnacle Systems DV500

USER'S GUIDE

PINNACLE®
SYSTEMS

Pinnacle Systems DV500
User's Guide

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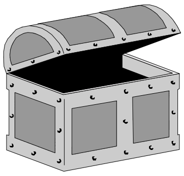

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FCC Compliance Statement

FOR YOUR OWN SAFETY

NOTE: Shielded cables should be used for a composite interface. This is to ensure continued protection against radio frequency interference.

FCC WARNING STATEMENT

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Shielded interface cable must be used in order to comply with the emission limits.

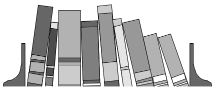
LABEL WARNING

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Pinnacle Systems DV500

Tested To Comply
With FCC Standards

FOR HOME OR OFFICE USE



About the User’s Guide

This User’s Guide explains how to install and use the Pinnacle Systems DV500 hardware and software. Instead of using the complete product name, the abbreviation DV500 is used for a better readability.

Subheadings In the margins are subheadings to help you quickly find your way through this manual.

Important text passages are marked with the “notepad” and this format.

Numbers mark step by step instructions:

1. Start TitleDeko.

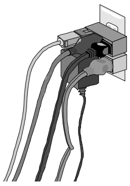
Bullets mark instructions for optional steps the order of which is not important.

- Connect the board to the camcorder.

All keyboard commands appear in this font:

```
install
```

Menus, commands, options or buttons which the user can select are written in *italics.*



For your own safety

In the interest of your own safety and the flawless functioning of your new product and computer system please note the following:

- Computer components are sensitive to static charge. Divert any electrostatic charge from your person before touching the components with your hands or any tools.
- Before opening the computer make sure that the power plug is disconnected from the wall outlet.

For changes or supplements that could not be included in the printed documentation, please, refer to the ReadMe file on the CD-ROM supplied with your system!.

Chapter 1: Welcome

GENERAL

The next generation of video is digital and DV is the world-wide digital standard. With the DV500, Pinnacle Systems offers a non-linear video editing system that meets the highest quality standard for DV productions.

What makes this product special, however, is its incorporation of classic post-production in **real-time**—in other words, without time-consuming software rendering. A real-time effects mixer outputs entire productions or creative ideas to the video monitor in full quality as soon as they have been arranged.

The DV500 comes with more than **200 wipes and dissolves** that run instantly in real-time. Furthermore, the card's effects mixer is also suitable for titles and filters.

The combination of DV hardware codec and real-time effects mixer marks the advent of dual-stream technology on standard desktop computers. No comparable video editing system offers more **productivity**, since the effects are visible instantly in full-quality video. In addition, videos can be processed for digital data media such as DVD and CD.

The DV500 is able to save projects as MPEG export data directly from the timeline so that DVD productions can be built.

The DV500 processes analog (S-Video, Composite video) and **digital** (DV, IEEE 1394) signals via corresponding inputs and outputs.

With its outstanding features, the DV500 sets new standards for quality, compatibility, and productivity.

DV500 PRODUCT FEATURES

❑ **Video resolution**
720 x 576 (PAL) or 720 x 480 (NTSC) according to ITU.R 601, studio quality, compatible with Betacam and DV; cropped size 704 x 576 (PAL), 704 x 480 (NTSC).

❑ **Bit rate**
50 Mbit/sec in dual-stream mode.
25 Mbit/sec in single-stream mode

❑ **Encoding method**
DV 25.

❑ **Bit rate control (for MP2 export only)**
Constant (CBR) or variable bit-rate (VBR).

❑ **Audio**
Support for
- 32 kHz 12 bit and 16 bit stereo
- 44 kHz 16 bit stereo
- 48 kHz 16 bit stereo

❑ **Playback mode**
Dual stream – 2 video files via one mixer for real-time effects.
Titles, filters, and 200 wipes and dissolves without time-consuming software rendering.

❑ **Production length**
Up to 3 hours video productions larger than 2 GB.
Capture of files up to 12 TBytes in length.

❑ **Instant Video™**
Intelligent, hardware-accelerated rendering, multi-file playback for Audio processor, perfect, lip-synch audio processing in CD or DV quality.

❑ **DVD and MPEG2-CD Production**
Export MPEG2 ML@MP (4:2:0) using IBP format suitable for DVD and MPEG2-CD authoring.
Direct interface to Minerva Impression.

❑ **Video overlay**
Real-time monitoring on computer screen.

❑ **Video Standards**
PAL, NTSC (US version NTSC only), audio input (stereo), audio output (stereo).

❑ **Standard ports**
S-Video (Y/C) and Composite (CVBS).
DV (IEEE1394).

ADDITIONAL INFORMATION

Production Process

Productions created with DV500 can be output to analog (S-VHS, Hi8, Betacam) or digital tape systems (DV) or stored as a file.

Files are saved in AVI format. Optionally, the MPEG II IBP compression method can also be used. This material is suitable for subsequent processing with DVD authoring software.

Real-time Processing

The DV500 is equipped with a real-time mixer, making it possible to mix and output, according to the specifications of an effect, two videos that are simultaneously being played back from the hard disk. This method is especially useful for wipes and dissolves, since these consist of two chronologically overlapping videos. Real-time playback occurs via the analog ports of the card. For digital playback, the effects have to be rendered.

DV500 offers more than 200 effects in real-time. DV500 can even superimpose color titles and other graphics over a video without prior rendering.

Instant Video

Instant Video coordinates playback of all videos within a production. In particular, it provides for so-called “cutlist playback”, so that multiple video files can be played back one after the other without interruption. The intelligent software detects all postproduction steps that do not take place in real-time, renders these quickly, and automatically integrates the result in the production. Every production consisting of different materials can be called up and played back again and again in context.

blueBOX

The blueBOX makes it easy to connect a video editing system to other video equipment. Of course it is possible to use both analog signal sources (for instance, camcorders) and recording devices (for instance, recorders) on the same box at the same time. The video inputs and outputs are designed for S-Video (Y/C) and Composite (FBAS) signals. The stereo audio signals are connected via line-out and line-in connections with cinch jacks.

The blueBOX can be positioned at your desktop so that it is always easily accessible, making it easy to plug in and unplug cables. This enables you to adapt the cabling between the blueBOX and other video devices to individual conditions quickly and flexibly. All jacks are marked with easy-to-understand symbols, thus ensuring fast, secure connections.

SOLUTIONS FOR VIDEO APPLICATIONS EVERYWHERE

No matter what kind of project you’re working on, DV500 gives you everything you need for professional quality results.

With the DV500, your video production can be a function of your creativity, not your budget. Just as it should be.

ADOBE PREMIERE SUPPORT

Adobe Premiere provides:

- Direct integration of the DV500 capture, playback and effects engine within Adobe Premiere.
- Intelligent Rendering, which automatically renders non-real-time playable segments.
- Source/program monitor consolidates clip, preview, trim and controller windows.
- Three-point editing.
- Collapsible AfterEffects-like timeline.
- Navigator palette speeds timeline access.
- New, key-frameable video and audio filters.
- DV device control.

Add Character to Your Productions with our TitleDeko Character Generator

Want to add easy-to-use, cutting-edge titling to your finishing station? Our powerful TitleDeko character generator package comes standard with DV500. This plug-in version of our industry-leading Deko CG product lets you create your own title style, with customizable faces, edges, shadows and underlines. TitleDeko’s library of text effects includes rotate, skew, glow, emboss, texture, neon, metallic and extrude. With DV500, use TitleDeko to easily add rolls and crawls, or other movements to your titles.

Integrate into any Digital Production Environment

With the onboard DV/1394 ports you can capture digital videos and output them to a connected DV device.

HOW THIS GUIDE IS ORGANIZED

This User Guide is not intended to be a supplement to the Adobe Premiere User's Guide. For detailed information on Adobe Premiere, please refer to the Adobe Premiere User's guide.

This manual consists of the following chapters:

Overview
The chapter “Welcome” introduces the DV500, provides an overview of its capabilities and explains the organization of, and conventions used in, this User’s Guide.

System requirements
The chapter “Before You Begin” gives you all necessary information about the system requirements needed to work efficiently with DV500. In addition the package contents are introduced in detail.

Installing Adobe Premiere
The chapter “Installing Adobe Premiere” tells you how to install Adobe Premiere.

Hardware installation
The chapter “Installing the Hardware” explains the hardware installation.

Connecting the blueBOX
The chapter “Connecting the blueBOX” shows how to connect DV500, the blueBOX and the video devices.

Software installation
The chapter “Installing the Software” describes the installation of the software under Windows 98, Windows 2000, and Windows NT.

Capture
The chapter “Capture, Editing and Playback” gives you detailed information on how to capture, edit and playback video clips to tape.
In addition, the Device control functions are described in detail.

DV500 Control
The chapter “DV500 Control ” describes all features of the Control, which allows you to specify individual settings.

DV Material
The chapter “Working with DV Material” introduces step by step how to capture video clips using the DVTools.

DVTools
The chapter “DVTools” describes in detail the functions of the three main components of the DVTools: The Capture Gallery, the Tape Gallery, and the DV Device Control.

Effects
The chapter “Transitions, Filters and Supersition” introduces the Pinnacle Systems’ real-time transitions and filters which allow you to check the effects without having to render the clip.

3D Effects
The chapter “Pinnacle FreeFX” shows how to work with the Pinnacle accelerated 3D effects.

Instant Video
The chapter “Instant Video” gives you information about how to minimizes the rendering time under Adobe Premiere considerably.

TitleDeko
The chapter “TitleDeko” explains how to use the TitleDeko character generator to add titles, rolls and crawls, with a variety of text effects.

Video SpiceRack
The chapter “Video SpiceRack” introduces Video SpiceRack, a collection of 300 top-quality transitions and dynamic effects.

Hollywood FX
The chapter “Hollywood FX” decribes how to generate 3D transitions and near realtime effects for your videos.

Export
The chapter “Export to AVI, DVD- or MPEG2-CD” explains the settings for an export of your project.

Technical data
The chapter “Technical Data” informs you about the most important data of DV500.

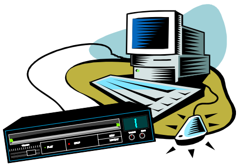
Appendix
The “Appendix” contains a troubleshooting guide, a detailed multimedia glossary and the declaration of conformity.

Index
An index concludes this User’s Guide.

Chapter 2:
Before You Begin

This chapter tells you which computer system components are required for the operation of the DV500 and what is included in the DV500 package contents.

SYSTEM REQUIREMENTS



Please make sure your system meets the following requirements before installing the DV500:

PC System

- At least Pentium II® 400 or faster compatible processor
- 1 x 32-bit PCI 2.1 slot
- *Windows 98 / Windows 98 SE / Windows ME*
  128 MByte RAM
- *Windows 2000*
  196 MByte RAM
- *Windows NT*
  128 MByte RAM
- 500 MByte hard disk capacity for system files and programs, e.g. Adobe Premiere 5.1a or higher
- 20 GByte hard disk capacity for capture / playback of video, able to sustain at least 8 MBytes/sec transfer rate.

If you plan to use a DMA capable IDE hard disk (e.g. IDE-UDMA 100 or IDE-UDMA 66) for your video, you should absolutely install a DMA busmaster driver to ensure the smooth function of your DV500 board. You will find this driver on the CD-ROM supplied with your motherboard, in the internet, or contact your dealer.

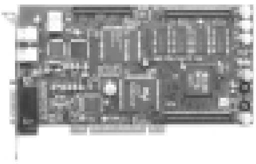
- 16-bit display adapter with DirectDraw drivers, OpenGL compatible
- DirectX 7.0 or higher (for FreeFX)
- CD-ROM drive
- 48 kHz compatible sound board.

Software

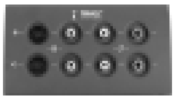
- Windows 98, Windows 98SE, Windows ME, Windows 2000, or
- Windows NT 4.0 SP4 or higher.

PACKAGE CONTENTS

Please make sure your DV500 system is complete before you begin the installation. The system includes[*]:



DV500 board[**]

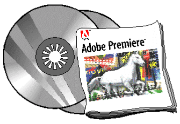


blueBOX

CD-ROM with:
- drivers
- extended Adobe Premiere presets
- Instant Video
- Pinnacle TitleDeko
- online documentation
- FreeFX effects (not for Windows NT)
- Adobe Premiere Update

IEEE-1394 cable

Pixèlan Video SpiceRack Overview



Adobe Premiere

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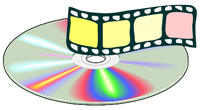
[*] Depending on the delivery scope, the package contents may vary from the contents listed in this manual.
[**] For model and serial number of your board, refer to the label on the board.



Minerva Impression CD

Documentation

Hollywood FX Copper

If any parts are missing, please contact your retailer.

Computer components are sensitive to electrostatic charge. Do not take the DV500 board out of its antistatic package until you install it.

Related Information

Refer to Pinnacle at `http://www.pinnaclesys.com` for the latest information on configurations and software updates.

Refer to Microsoft Windows documentation, online help and Microsoft Website for information on the Windows operating system.

Chapter 3: Installing Adobe Premiere

The following chapter describes the procedure to install Adobe Premiere.

You must install Adobe Premiere **before** installing the DV500 board in your computer, because the DV500 presets must be copied to the appropriate Adobe Premiere folder during the installation of the DV500 software.

Proceed as follows to install Adobe Premiere:

1. Place the Adobe Premiere CD-ROM in your CD-ROM drive.
2. If the installation program does not start automatically, select *Run…* from the *Start* menu.
3. Depending on your drive, enter, for example:

   ```
   e:\premiere\setup.
   ```

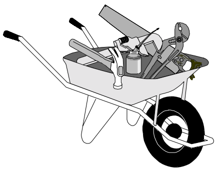
   If your CD-ROM drive has a different drive designation, change the path accordingly.

   —or—

   Click on *Browse...*, switch to your CD-ROM drive and to the directory mentioned above and double-click the `setup.exe` file.
4. Click *OK*.
5. Follow the program installation instructions on the screen.
6. Install the Adobe Premiere Update.

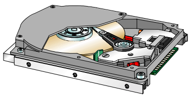
After you have installed Adobe Premiere on your computer, you can install the DV500 board and software.

If you ever need to reinstall Adobe Premiere, please remember to run the DV500 installation again, selecting at a minimum the Presets and PlugIns. DV500 will not work correctly with Adobe Premiere if these components are missing.



Chapter 4:
Installing the Hardware

DEFRAGMENTING THE HARD DISK



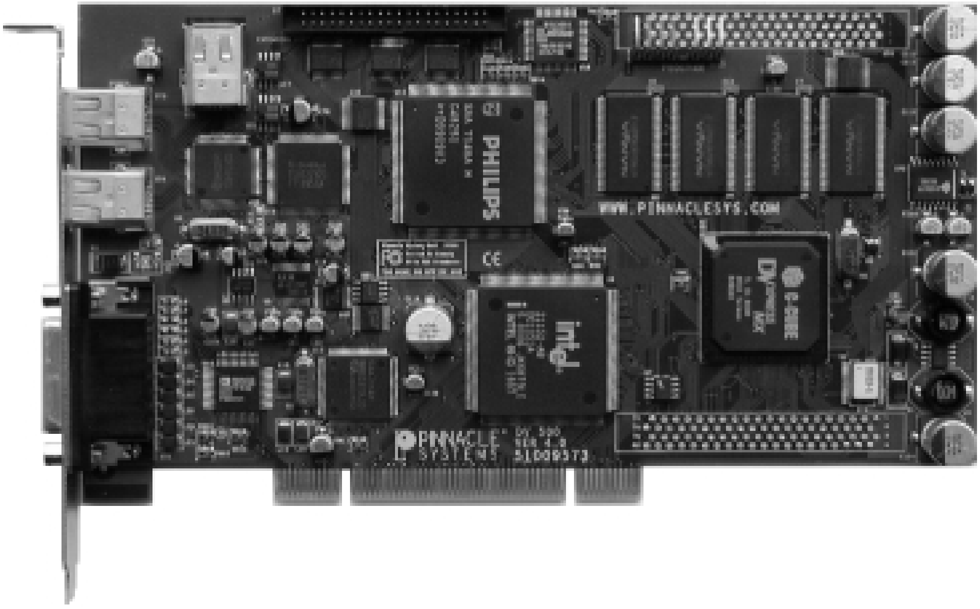
Before installing and configuring the DV500 you should defragment your hard disk/s. Under Windows 98/98SE/ME you find the defragmenter tool via *Programs, Accessories, System Tools, Disk Defragmenter*.

If you use Windows 2000, please proceed as follows: Click on *My Computer*, then click right on the disk to be defragmented, then choose *Properties* , *Tools*, and under *Defragmentation* click on the button *Defragment Now...* .

If you use DV500 under Windows NT, use a tool you can obtain from your computer store to defragment your hard disk.

INSTALLING THE DV500

The following chapter explains how to install the DV500 into your computer.



Inserting DV500

To insert the DV500 into your computer, proceed as follows:

1. **Discharge yourself.**

   Discharge yourself by touching the metal case of your computer.

2. **Switch off the computer, disconnect the cables.**

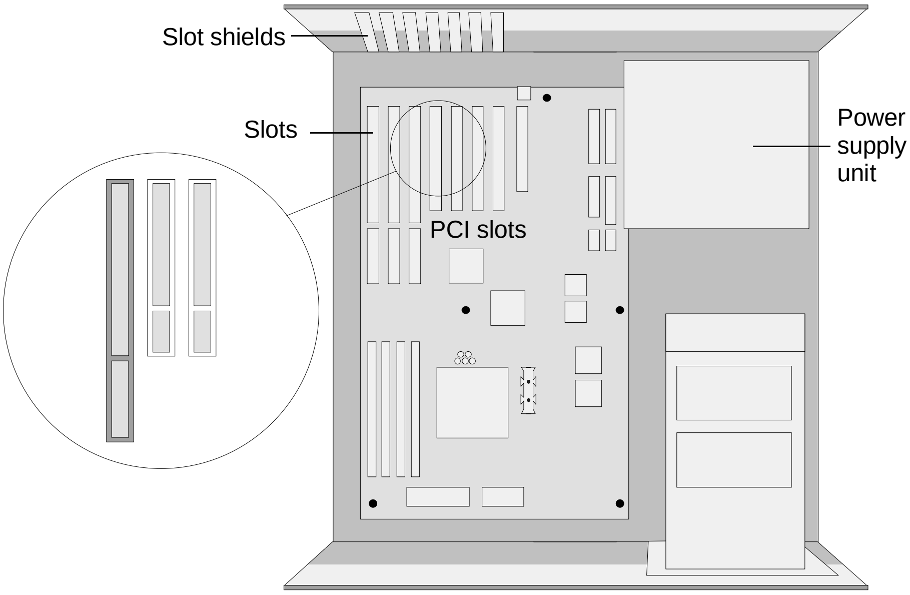
   Switch off the computer and all peripheral devices. Pull out the power cord and disconnect all necessary cables.

3. **Remove the cover.**

   Loosen the screws of the computer's cover and remove the cover.

4. **Select a PCI slot.**

   Select a free (busmaster) PCI slot for the DV500 board.

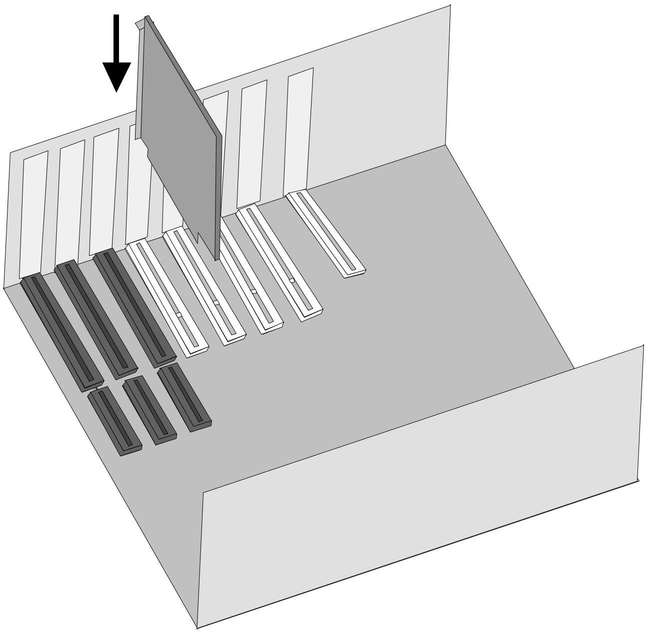


5. **Remove the slot bracket.**

   Remove the slot bracket at the back of the computer. If necessary, remove the screw at the cover.

6. **Insert the board.**

   Insert the board carefully in the selected slot. Hold the board at the top edge and push both ends simultaneously into the slot. Press the board's top edge to make sure that the board is firmly seated in the slot.



If the board cannot be inserted without problems, do not force the board into place. The contacts at the connector could bend. Instead, pull the board out carefully and try again.

7. **Screw in the slot bracket.**

   Screw the slot bracket tight.

8. **Reconnect the cables.**

   Reassemble the computer's casing. Reconnect the cables.

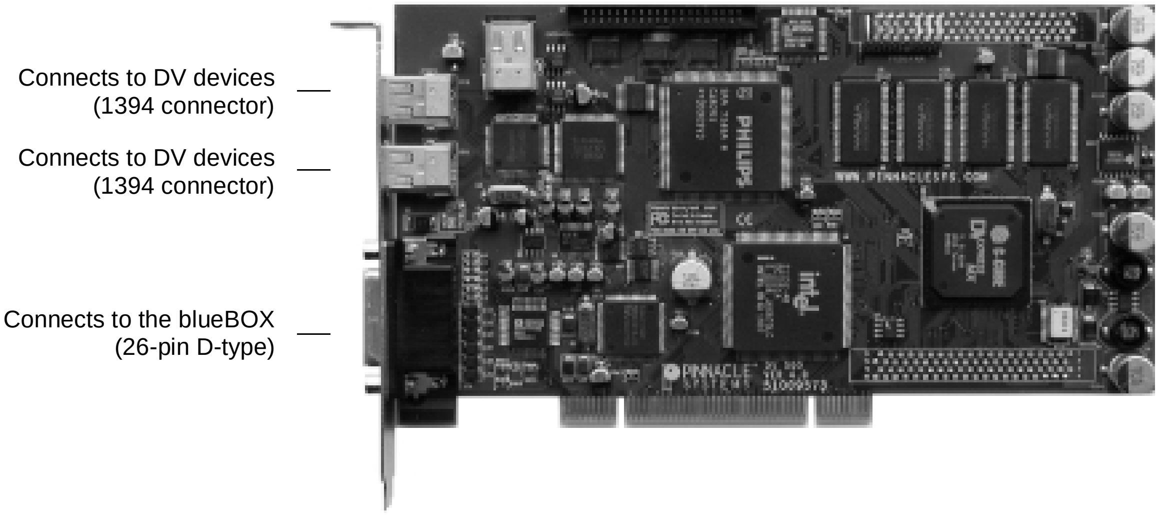
The DV500 hardware installation is completed.

In the next step, you can connect the breakout box and the video devices as is described in the following chapter and install the software as described in the chapter „Installing the DV500 Software“.

Chapter 5: Connecting the blueBOX and the Video Devices

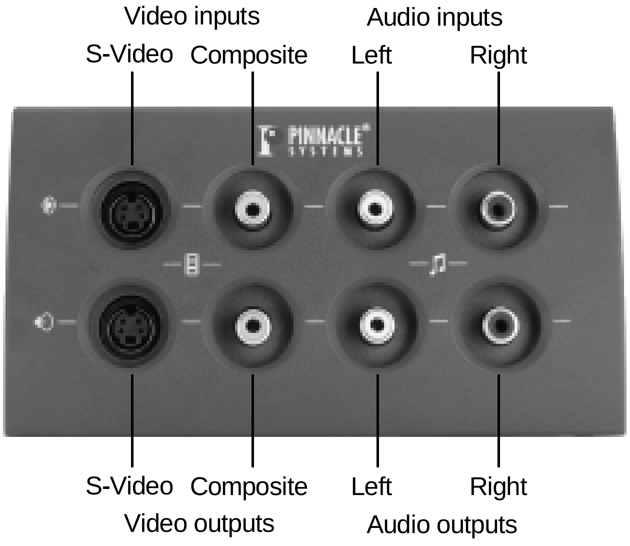
The following chapter tells you how to connect your video devices to the DV500 via the blueBOX, **with the computer turned off**. To do so you will need the appropriate cables.

The following illustration shows the DV500 board with its connections:



The free connector of the board does not have any function presently, it is designated for possible future extensions.

The following illustration shows the connections of the blueBOX:



CONNECTING THE VIDEO DEVICES

Via the blueBOX you can connect S-Video (Y/C) as well as Composite video devices to DV500. The blueBOX is connected to the DV500 via the cable of the blueBOX.

In the following, the options for cabling your video source—referred to as the *player*—is described. The player provides the video and audio signals that you want to digitize (“capture”) to your hard disk and then edit on your PC.

Subsequently, connections to the *recorder* are explained. The recorder is the device—typically a VCR—that you would like to output your final production to.

Player: DV device

Devices that connect to the board include any DV or Digital 8 format video camcorder or recorder that has an IEEE-1394/DV connector. On many devices, this connector is labeled “i.Link”.

To connect your DV camcorder/VCR to the DV500, use the IEEE-1394 DV cable included in the package.

1. **Connect the IEEE-1394 cable to the DV500.**

   Connect the 6-pin connector of the IEEE 1394 DV cable to one of the 1394 data ports of your DV500.

2. **Connect the IEEE-1394 cable to the DV device.**

   Connect the 4-pin connector of the IEEE 1394 AV cable to the DV IN/OUT or the DV OUT connector of your DV camcorder/VCR.

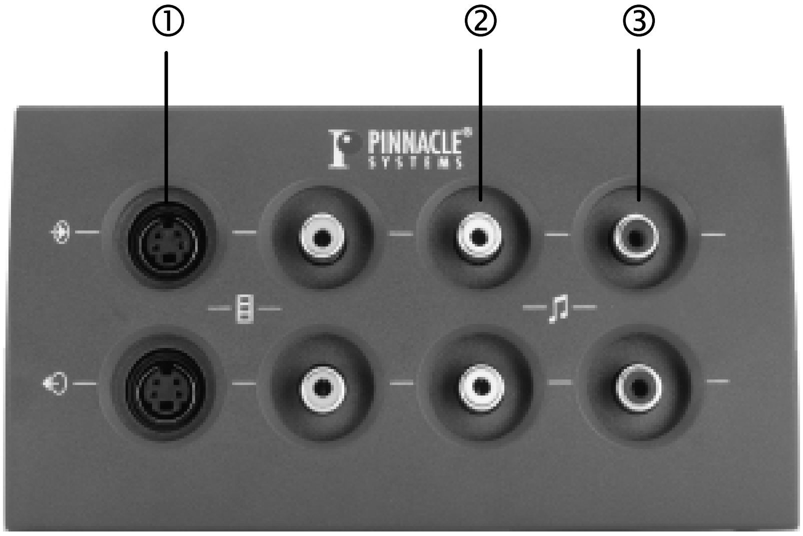
Player: S-Video device

Choose this type of connection if your player has an S-Video output.

The following table and the illustration give an overview of the connections:

Player Out		blueBOX In
S-Video Output	➢	S-Video Input ①
Audio Output L	➢	Audio Input L ②
Audio Output R	➢	Audio Input R ③

blueBOX Out		DV500 In
blueBOX Cable	➢	26-pin D-type Connector



If your player is equipped with S-Video outputs as well as with Composite video outputs, please choose S-Video, as this will provide the highest level of video quality.

If your player has a Scart connector, you will need an appropriate adapter. This adapter is available wherever video recorders are being sold.

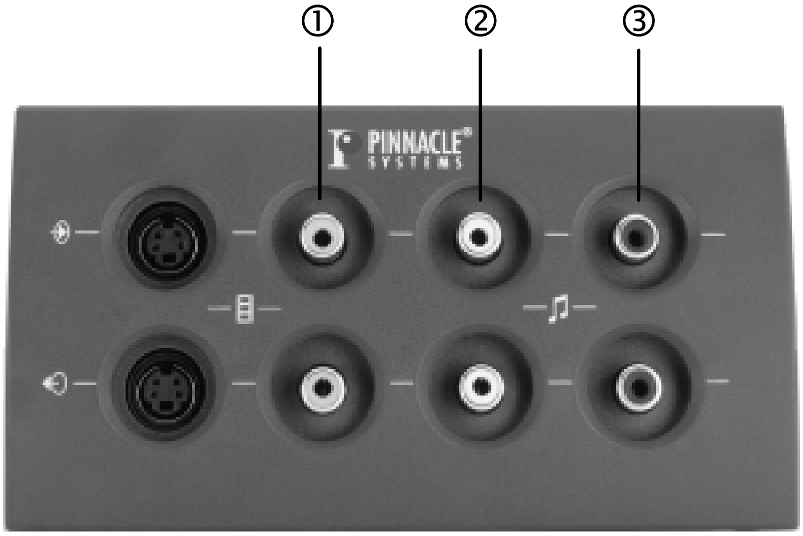
Player: Composite Video device

Choose this type of connection if your player has a Composite video output.

The following table and the illustration give on overview of the connections:

Player Out		blueBOX In
Composite Video Output	➢	Composite Video Input ①
Audio Output L	➢	Audio Input L ②
Audio Output R	➢	Audio Input R ③

blueBOX Out		DV500 In
blueBOX Cable	➢	26-pin D-type Connector



If your player has a Scart connector, you will need an appropriate adapter. This adapter is available wherever video recorders are being sold.

Recorder: DV device

PAL device:
Many PAL devices sold in Europe usually have only a DV **output**. These can be identified by the label DV OUT (and not DV IN/OUT) on the DV connector. Such devices do **not** support recording of DV data back to videotape. Note that with DV500, you can of course use the analog outputs to play your finished DV project to an analog VCR.

NTSC devices
Devices that connect to the board include any DV or Digital 8 format video equipment that has an IEEE-1394/DV connector, such as Sony Digital Handycams, DCR-VX1000, DCR-X700, and DCR-PC7. . On many devices, this connector is labeled „i.LINK”.

If you have not already done so, connect your DV camcorder/VCR to the DV500. Use the IEEE-1394 AV cable included in the package.

1. **Connect the IEEE-1394 cable to the DV500.**

   Connect the 6-pin connector of the IEEE-1394 DV cable to one of the 1394 data ports of your DV500.

2. **Connect the IEEE-1394 cable to the DV device.**

   Connect the 4-pin connector of the IEEE-1394 AV cable to the DV IN/OUT connector of your DV camcorder/VCR.

The DV output always carries the same signal that you will see on the analog outputs. It is thus possible to use a DV device on the DV output and simultaneously connect and use a video monitor and speakers to the analog outputs.

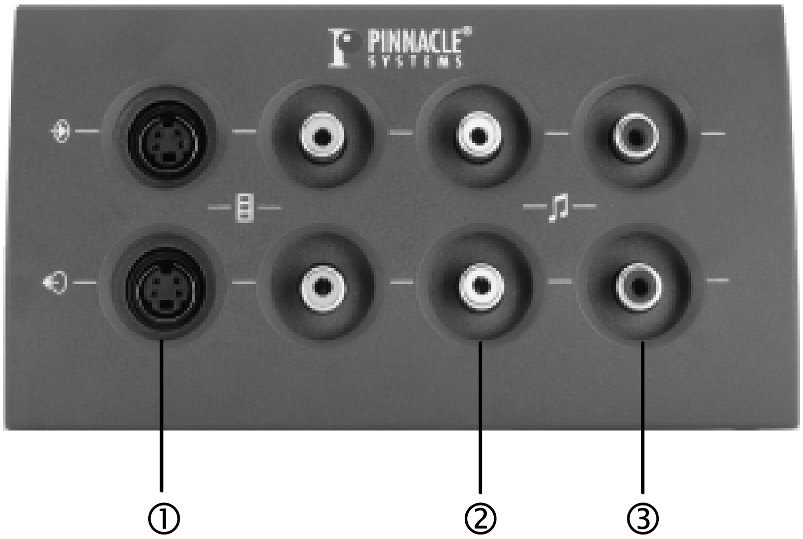
Recorder: S-Video device

Choose this type of connection if your recorder has an S-Video input.

The following table and the illustration give an overview of the connections:

DV500 Out		blueBOX In
26-pin D-type Connector	➢	blueBOX

blueBOX Out		Recorder In
S-Video Output ①	➢	S-Video Input
Audio Output L ②	➢	Audio Input L
Audio Output R ③	➢	Audio Input R



If your player is equipped with S-Video outputs as well as with Composite video outputs, please choose S-Video, as this will provide the highest level of video quality.

If your player has a Scart connector, you will need an appropriate adapter. This adapter is available wherever video recorders are being sold.

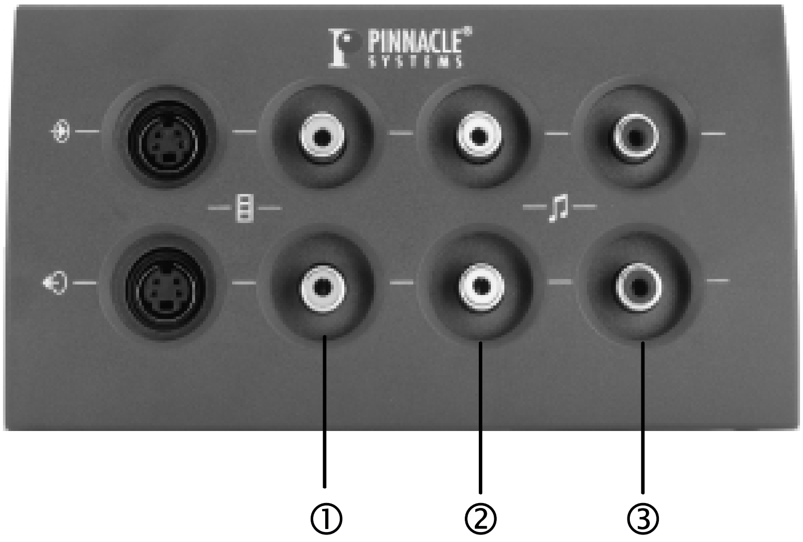
Recorder: Composite video device

Choose this type of connection if your recorder has a Composite input.

The following table and illustration give an overview of the connections:

DV500 Out		blueBOX In
26-pin D-type Connector	➢	blueBOX

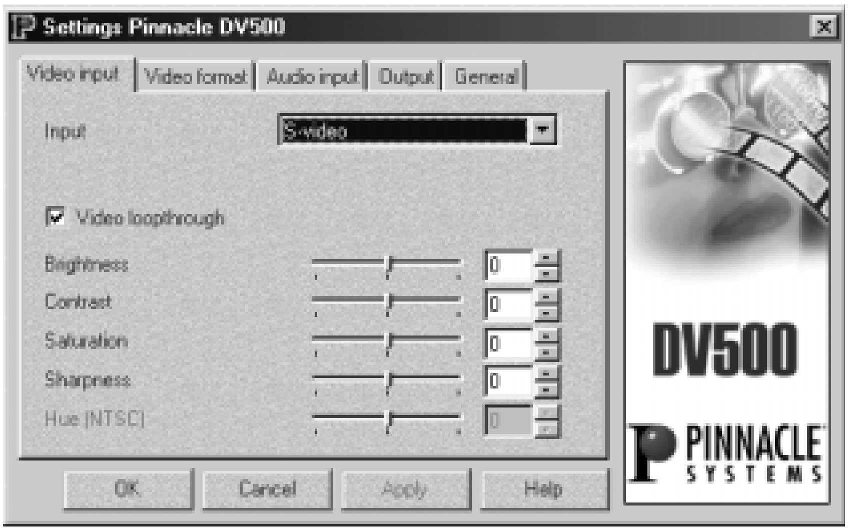
blueBOX Out		Recorder In
Composite Video Output ①	➢	Composite Video Input
Audio Output L ②	➢	Audio Input L
Audio Output R ③	➢	Audio Input R



If your player has a Scart connector, you will need an appropriate adapter. This adapter is available wherever video recorders are being sold.

PLAYER AND RECORDER IN ONE DEVICE

Up to now, player and recorder have been treated as two separate devices. When editing video with DV500, it is also possible to combine both functions in one single video device. In this case, connect the device to the blueBOX as a player *and* as a recorder, as described above. In order to avoid video signal feedback, you should **de**activate the option *Video loopthrough* in the DV500 Control software.

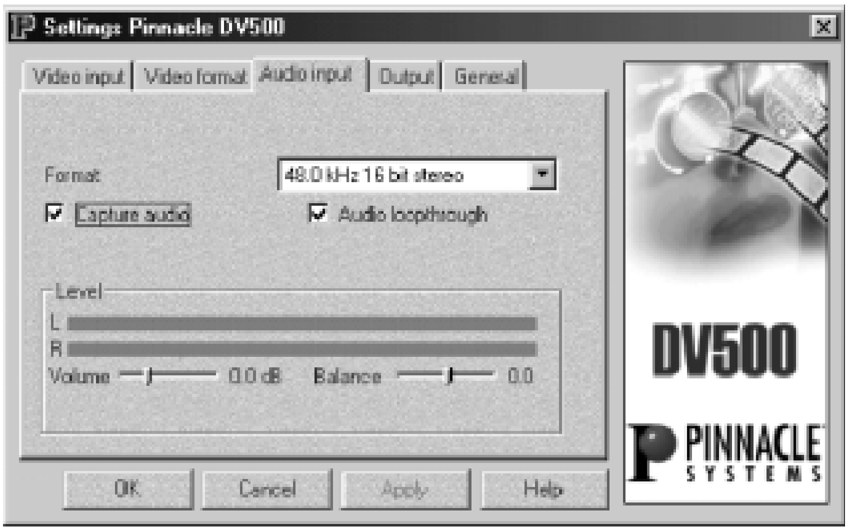


Input: S-video

☑ Video loopthrough

Brightness: 0
Contrast: 0
Saturation: 0
Sharpness: 0
Hue (NTSC): 0

Similarly, in order to avoid audio signal feedback, you should **de**activate the option *Audio loopthrough* in the DV500 Control software.



Format: 48.0 kHz 16 bit stereo

☑ Capture audio ☑ Audio loopthrough

Volume 0.0 dB Balance 0.0

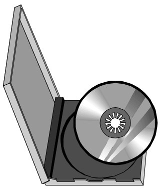
CONNECTING THE VIDEO MONITOR AND LOUDSPEAKERS

The video display on the PC monitor gives a preview during editing. Usually, the video is not displayed in full quality, nor does it have the full size.

In order to check the image and the sound quality during capture, editing and output, we recommend that you connect a video monitor or TV set, either with integrated or separate loudspeakers. There are two possibilities:

- Connect the monitor to the video and audio outputs of your recorder. In this case the output signal of DV500 is transmitted to the input of the recorder (see cabling above), through the recorder and on to the monitor.
- Connect the monitor directly to the free outputs of the blueBOX. The monitor can be connected to the S-Video or Composite Video output of the blueBOX. If necessary, use an appropriate adapter.

For working with Minerva Impression and to output audio during certain operations in Adobe Premiere (e. g. scrubbing), you will also need speakers connected to the audio output of your PC sound board.
Instead of using two pairs of speakers, you may want to connect the audio outputs of both the DV500 and your PC sound board to an audio mixer. Its output would then be connected to both the video recorder and the speakers used for monitoring.



Chapter 6: Installing the DV500 Software

After you have installed the DV500 board in your computer, you can install the DV500 drivers and software.

Make sure that you have installed Adobe Premiere **before** you install the DV500 software.

The installation steps for Windows 98, Windows 2000 or Windows NT are slightly different. Please refer to the corresponding sections:

- Installing the Software for Windows NT 4.0 as of page 24.
- Installing the Software for Windows 2000/98 as of page 25,

During the installation the following items are copied to / installed on your hard disk:

- The DV500 drivers
- Presets for Adobe Premiere
- Instant Video
- PlugIns for Adobe Premiere
- Real-time effects
- FreeFX (Windows 98 / 2000 only)
- The TitleDeko application
- Video SpiceRack
- DVTools
- The online manual
- A short installation guide
- Help files and files with information that were not available when the manual was printed.

The DV500 program group is created and the DV500 Control icon is added to the Control Panel.

You will find detailed information concerning the installation in the “Additional information” section as of page 27 in this chapter.

INSTALLING THE SOFTWARE FOR WINDOWS NT 4.0

To install the software for Windows NT 4.0, please start your computer, if necessary start Windows NT 4.0 and insert the installation CD-ROM into the CD-ROM drive.

Important for Windows NT: Log in with administrator rights.

If the Autostart function has been disabled under Windows NT double click on *My Computer* icon on the Windows desktop and change to the CD-ROM drive. The file autorun.exe will be detected. Open this file.

—Or—

Select the *Run*... command in the *Start* menu and enter **`e:\autorun`**, where **`e:\`** represents the driver letter for your CD-ROM drive. If necessary, enter another letter. Click on OK.

The installation program

The installation program is started in the language determined by the Regional Settings (*Start* menu, *Settings*, *Control Panel*, *Regional Settings*) of the installed Windows version: German, English, or French.

If other Regional Settings than German, English or French are activated on your computer, you need to select the language in which the installation should be carried out.

1. **If necessary, select language, click *Next*.**

   If necessary, select the language in which the installation should be carried out.

   Click on the *Next* button.

2. **Follow the instructions.**

   Follow the instructions of the installation program.

   You will find detailed information concerning the installation in the “Additional information” section as of page 27 in this chapter.

INSTALLING THE SOFTWARE FOR WINDOWS 2000/98

To install the software for Windows 2000/98, please proceed as follows:

1. **Switch on computer.**

   Switch on your computer. Windows is started automatically.

   If your computer is configured in such a way, that Windows is not started automatically, start Windows now.

Important for Windows 2000: Log in with administrator rights.

   After Windows starts, the new hardware (the PCI Bridge of the DV500) is found, and the respective driver will be installed..

   The *Add New Hardware Wizzard / Found New Hardware Wizard* dialog appears.

2. **Click *Next.***

   Click on the *Next* button.

3. **Click *Next.***

   In the next window click on the *Next* button.

4. **Select *CD-ROM drive,* insert the installation CD, click *Next.***

   Now specify the folder in which Windows 2000 should search for the device drivers. Activate the check box CD-ROM drive, make sure all other check boxes are deactiveted and insert the DV500 CD in your CD-ROM drive, click the *Next* button.

   The DV500 driver will be found.

5. **Follow the instructions.**

   Follow the instructions of the Windows installation program.

DV500 Overlay

The “Pinnacle Systems DV500 Overlay” is found as a new hardware component.

6. **Click *Next.***

   In the next installation step click on the *Next* button.

   The software for the new component will be installed.

7. **Follow the instructions.**

   Follow the instructions of the Windows installation program.

DV500 E4

The “Pinnacle Systems DV500 E4” is found as a new hardware component.

8. **Click *Next.***

   Click on the *Next* button.

9. **Click *Next.***

   In the next windows click on the *Next* button.

10. **Click *Next*.**

The checkbox *CD-ROM* is already activated. Click on the *Next* button.

Windows 98 Under Windows 98 the “PCI OHCI Compliant IEEE 1394 Host Controller” will be found. From the list of the selectable drivers choose the *Pinnacle Systems DV500* driver. Click on *Next*.

Windows ME Under Windows ME the “Texas Instuments PCI OHCI Compliant IEEE 1394 Host Controller” will be installed automatically. After the reboot the *Pinnacle Systems DV500* will be installed (as well as the DV500 Overlay and the DV500 E4 again).

Windows 2000 Under Windows 2000 confirm the following window with *Yes*.

11. **Follow the instructions.**

Follow the instructions of the Windows installation program.

The Pinnacle software installation program starts. If the installation program is not started automatically, please read the following section.

Windows 2000 Note: Unter Windows 2000 the Pinnacle installation program is not started automatically. To start the installation program, please proceed as follows: Double click on *My Computer* icon on the Windows desktop and change to the CD-ROM drive. The file autorun.exe will be detected. Open this file.

—Or—

Select the *Run*... command in the **Start** menu and enter e:\autorun, where e:\ represents the driver letter for your CD-ROM drive. If necessary, enter another letter. Click on *OK*.

The installation program

The installation program is started in the language determined by the Regional Settings (*Start* menu, *Settings, Control Panel, Regional Settings*) of the installed Windows version: German, English, or French.

If other Regional Settings than German, English or French are activated on your computer, you need to select the language in which the installation should be carried out.

12. **If necessary, select language, click *Next*.**

If necessary, select the language in which the installation should be carried out.

Click on the *Next* button.

13. **Follow the instructions.**

Follow the instructions of the installation program.

You will find detailed information concerning the installation in the “Additional information” section as of page 27 in this chapter.

ADDITIONAL INFORMATION (INSTALLATION PROGRAM)

Selecting Setup Type (installation program)

In the *Setup Type* window, Pinnacle Systems recommends to select the Typical option.

- *Typical*
  Installs all components and uses the default settings.
- *Compact*
  Skips some components (e.g. online manual) and uses the default settings.
- *Custom*
  Lets you select the components and allows to adjust the settings individually. You should only choose this option if several versions of Premiere are installed on your computer, or if your system hard disk is very slow.

Selecting hard disk (installation program)

If you wish to copy the files to another hard disk / another folder, click on the *Browse*... button in the Setup Type window and define the hard disk / the folder. Click on the Next button to proceed the installation.

The driver software should be installed on the system hard disk and not on the hard disk for the video files!

Selecting components (installation program)

If you have chosen Custom as setup type you can directly choose those components in the dialog box *Select Components*, which you want to install.

- *DV products software*
  The option DV500 software includes the drivers for DV500, which must be installed in order to use the functions of DV500.
- *System software**
  The System software includes DirectX and DirectMedia. If you have received the note at the beginning of the installation that there is no DirectX or an older version installed on your system, you should install the System Software.
- *Adobe Premiere AddOns*
  Presets for Adobe Premiere which have been developed specifically for the DV500 board and the PAL and NTSC standard. These presets are required for working with Adobe Premiere. If you activate the DV500 Software check box, you can not deactivate the Pinnacle Plugins and the Pinnacle Effects option.

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* If you cannot select this item, the newest system software is already installed on your computer.

- *Video SpiceRack*
  The Vide SpiceRack software comes with lots of transitions and effects.
- *Documentation*
  The User´s Guide is also available in PDF format and can be opened with the Acrobat Reader. If no Acrobat Reader or an older version has been installed on your computer, use the Documentation option to install the current version.
- *DVTools*
  DVTools let you scan for clips on your DV tape, add in and out points, control your DV devices, transfer DV to your hard disk and back to DV tape.

After having determined the components, click *Next*.

Log in with administrator rights

To install the DV500 under Windows NT and Windows 2000, you definitely have to log in with administrator rights. This is not necessary for Windows 98.

Possible additional installation steps

With some hardware configurations the *Add New Hardware Wizzard* dialog appears again.

Driver for DV500 Overlay

- Click on the *Next* button.
- Cick *Next*.
- Select *DV500 Overlay* and click the *Next* button.
- Follow the instructions of the Windows installation program.

Driver for DV500 E4

For the installation of the next driver the *Add New Hardware Wizzard* dialog appears again.

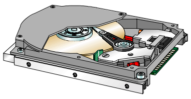
- Click on the *Next* button.
- Cick *Next*.
- Select *DV500 E4* and click the *Next* button.
- Follow the instructions of the Windows installation program.

Driver for DV500 IEEE 1394

At the end, the driver for DV500 IEEE 1394 is installed automatically.

- Follow the instructions of the Windows installation program.

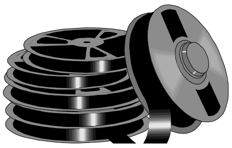
Defragmenting the Hard Disk



If you have problems digitizing video clips you should defragment your hard disk/s. You find the Windows 98 defragmentation utility under *Start*, *Programs*, *Accessories*, *System Tools*, *Disk Defragmenter*.

If you use Windows 2000, please proceed as follows: Click on *My Computer*, then click right on the disk to be defragmented, then choose *Properties* , *Tools*, and under *Defragmentation* click on the button *Defragment Now...* .

If you use DV500 under Windows NT, use a tool you can obtain from your computer store to defragment your hard disk.



Chapter 7: Capture, Editing and Playback

The process by which video and audio signals are digitized and then stored to your hard disk is called capturing. This chapter explains how to use the features of DV500 video and audio capture that differ from standard Adobe Premiere operation. Generally, these differences involve settings and preferences for your DV500 hardware and software. For details on standard Premiere functionality, refer to the Adobe Premiere User Guide. This chapter also describes how to play back captured video sequences with DV500.

QUICK CAPTURE CHECKLIST

If you want to capture right now, follow these steps.

Function	Where and What
1. Connect video source	Connect a video source such as a camcorder or VCR to one of the video and audio inputs of the DV500 breakout box or to the DV connector. Set the video source into play mode so that it outputs a signal.
2. Start Adobe Premiere	From the *Start* menu and the *Adobe* program group start Adobe Premiere .
3. Select preset	To select a Pinnacle preset, click on the *Load* button.
4. Load preset	To load the preset, select the appropriate preset, click on the *OK* button, click *OK* again.
5. Project selections made?	IF you have selected a Pinnacle Preset from the *Load Project Settings* dialog box, go on to Step 6. Otherwise, follow the procedure under *Set Recording Options*.
6. Select scratch disk	To choose your capture disk, select *Preferences/Scratch Disk* from the Adobe Premiere *File* menu. Choose a hard drive and click *OK*. If necessary, activate the device control, see also page 38.
7. Bring up movie	Select *File*, *Capture* and *Movie Capture*. The *Movie Capture* window appears.
8. Begin capture	Start your source tape and click on *Record* in the *Movie Capture* window.
9. End capture	To end capture, press the <Escape> key.

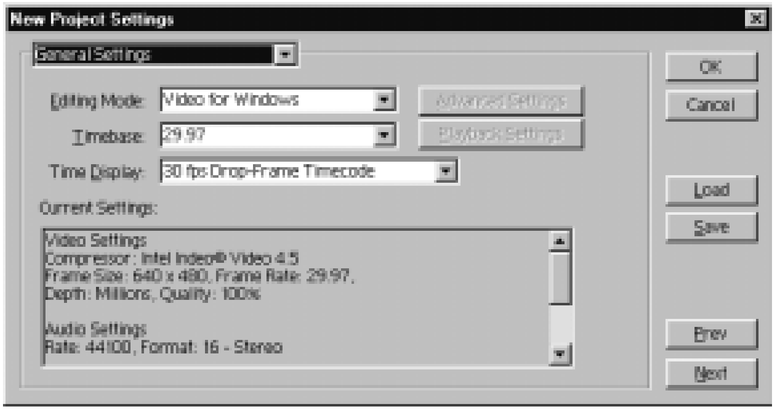
CAPTURING VIDEO IN DETAIL

Loading a Preset

The presets included with DV500 contain settings that guarantee an optimal operation of DV500 and Adobe Premiere . We strongly recommend that you load a Pinnacle preset every time you start Premiere . If you select the settings manually, please note that Premiere will allow you to select resolutions, frame rates and other options that DV500 cannot support.

1. To load an appropriate preset, start Adobe Premiere via the *Start* menu and the program group *Adobe*.

   The *New Project Settings* window appears:



Editing Mode: Video for Windows
Timebase: 29.97
Time Display: 30 fps Drop-Frame Timecode

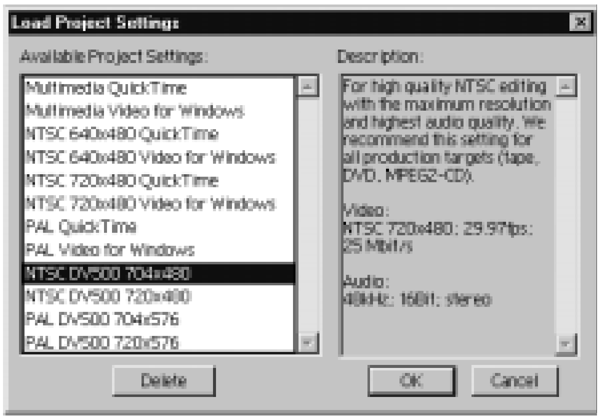
Current Settings:

Video Settings
Compressor : Intel Indeo® Video 4.5
Frame Size: 640 x 480, Frame Rate: 29.97,
Depth: Millions, Quality: 100%

Audio Settings
Rate: 44100, Format: 16 - Stereo

2. Click the *Load* button in the *New Project Settings* dialog box.

   The *Load Project Settings* window appears.



Available Project Settings:

Multimedia QuickTime
Multimedia Video for Windows
NTSC 640x480 QuickTime
NTSC 640x480 Video for Windows
NTSC 720x480 QuickTime
NTSC 720x480 Video for Windows
PAL QuickTime
PAL Video for Windows
NTSC DV500 704x480
NTSC DV500 720x480
PAL DV500 704x576
PAL DV500 720x576

Description:

For high quality NTSC editing with the maximum resolution and highest audio quality. We recommend this setting for all production targets (tape, DVD, MPEG2-CD).

Video:
NTSC 720x480: 29.97fps: 25 Mbit/s

Audio:
48kHz: 16Bit: stereo

3. Select one of the settings that have been installed for your DV500 editing board.

   Please make sure that your selection between PAL and NTSC matches the video equipment that you will be using.

4. Click *OK* to use the DV500 setting. The Premiere project settings are now optimized for working with the DV500 editing board. You return to the *New Project Settings* window.
5. Click *OK* to finish the loading of the preset.

The supplied presets guarantee best results and an optimal quality. If you do not use these presets and manually choose settings that the DV500 hardware does not support, editing will not work correctly.

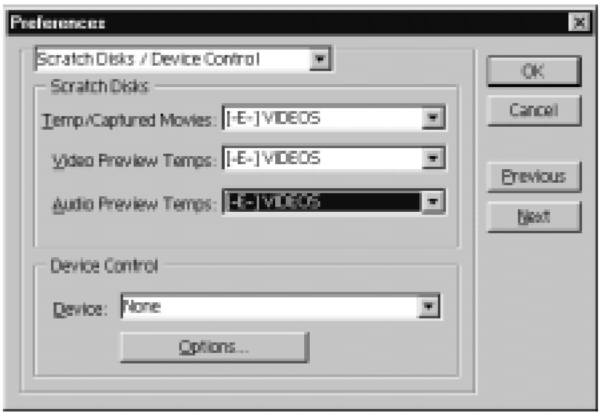
The supplied presets automatically set the output resolution, rendering field order, audio format and other Adobe Premiere parameters to the correct values for working with your DV500 editing board.

Preparing for Capture

Before you capture video under Adobe Premiere , please select the capture drive. This is the drive to which your AVI files will be written. It should be a separate hard disk that is fast enough and offers enough free space for digital video recording.

1. To choose your capture disk, select *Preferences* and *Scratch Disk / Device Control* from the Adobe Premiere *File* menu.

   The *Preferences* dialog box will appear, allowing you to choose the location for your files:



Preferences

Scratch Disks / Device Control

Scratch Disks

Temp/Captured Movies: [-E-] VIDEOS

Video Preview Temps: [-E-] VIDEOS

Audio Preview Temps: [-E-] VIDEOS

Device Control

Device: None

2. Select fast hard drives for all three types of files, *Temp/Captured Movies, Video Preview Temps* and *Audio Preview Temps* and click *OK*.

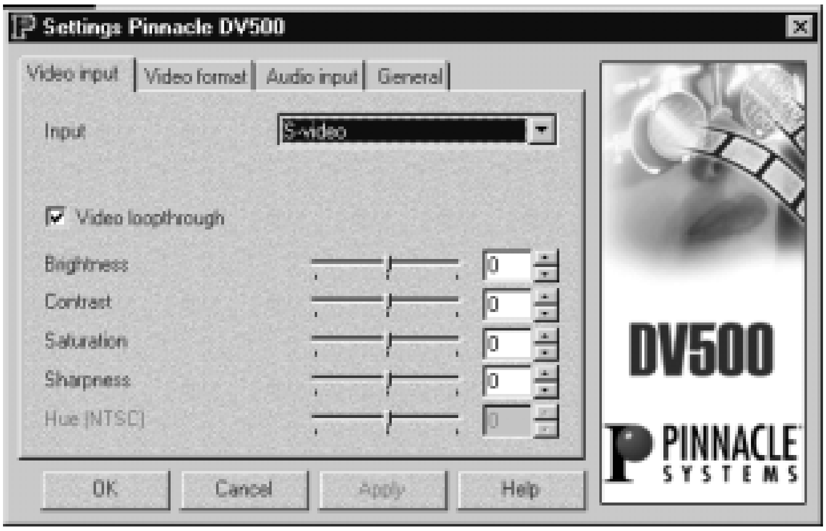
   If you use a DV device you should absolutely select *Pinnacle device control* as *Device Control*.

We recommend that you store all video files and Adobe Premiere project files along with their temporary video clips on one or more separate drives reserved for video editing. Storing any of these files on your system drive may result in unsatisfactory performance or dropped frames during capture or playback. To check the performance of your hard disks, please start the DVExpert tool in the DV500 program group.

Setting the Recording Options

Before capturing a video clip, you should check the capture settings. For this, select the *File* menu and the commands *Capture* and *Movie Capture*.

The *Movie Capture* window appears. Now use the right mouse button to click into the *Movie Capture* window and select the *Settings...* command to open the DV500 Control.



Input: S-video

☑ Video loopthrough

Brightness: 0

Contrast: 0

Saturation: 0

Sharpness: 0

Hue (NTSC): 0

The settings dialog is described in detail in the “Pinnacle Control” chapter in this User's Guide. In addition, clicking the *Help* button will also display the same information.

Analog devices only

For capture, please review the following items and make changes as appropriate:

- Video *input tab*
  Select the video input that your video source is connected to and make adjustments for brightness, contrast etc.
- Video *format tab*
  Select the video standard, and the frame size.
- Audio *input tab*
  Select the audio input and the audio capture format. In addition, the audio recording level may be adjusted here.

Now click *OK* to close the dialog.

The file type for capturing (AVI) can be changed by opening the Premiere *Project* menu and choosing *Settings* and *Capture*. Here, open the list box called *Capture* Format.

Capturing the clips

We recommend that you disconnect from any network prior to a video capture session, as network traffic may result in dropped frames.

1. Click the *Record* button at the top of the *Movie Capture* window.

   Capture commences. The video is displayed as it is captured on your monitor and PC.

2. Watch the display in the lower left corner of the *Movie Capture* window during the capture process. If you notice that *any* frames are dropped, press the <Esc> key to halt the capture process.

   Press the <Esc> key to end the capture session when you have captured the desired amount of video.

   The movie window appears.

3. Select the *File* menu and the *Save* command to save the file.

   Tip: Save your file to the root directory of your video disk. Saving it somewhere else will result in the file being copied to the new location. This can be time-consuming.

4. Close the *Clip* window.
5. Capture a second clip in the same way as you captured the first one.
6. Close the *Capture* window.

EDITING THE CLIPS

Adobe Premiere is a powerful editing application that usually provides several options on how to achieve a certain task, allowing you to pick the method that best matches your personal way of working. In the following, we describe one way of doing things - please refer to the Premiere User Guide for much more detailed information.

To edit the captured clips, activate the *Project* window.

1. Click right and select the commands *Import* and *File*.
2. If necessary, change to the hard disk and into the directory where you saved the files you captured.
3. Select the files and click *Open*.

   The selection of files works as follows:

   - **To select a single clip**: click on the file by pressing the left mouse button.
   - **To select several clips in a row**: click on the first clip pressing the left mouse button, press the <Shift> key and keep it pressed, click on the last clip pressing the left mouse button, release the <Shift> key.
   - **To select several clips out of order**: click on the first clip pressing the left mouse button, press the <Ctrl> key and keep it pressed, click on the next clip by pressing the left mouse button, etc., then release the <Ctrl> key.
4. Drag the first clip into the left *Monitor* window (*Source* window).
5. If desired, set in and out points.
6. Drag the clip into the right *Monitor* Window (*Target* window).

   The captured video clip automatically appears in the timeline.
7. Repeat the steps 4. - 6. to place the second clip in the timeline.
8. If you want to add a transition, drag the second clip into the *Video 1B* track.
9. Now, drag a desired transition from the *Transitions* windows into the *Transition* track. To specify the properties, double-click the transition.

Important: The transitions named “Pinnacle ...“ are real-time transitions, they do not require rendering. All others must be rendered before they can be played back.

10. To add a filter to the video clip, select the clip, click right and select *Filters*. The filters named Pinnacle can be done in real-time.

    For detailed information of how to select and use transitions and filters, please refer to the “Transitions, Filters and Superimpositions” chapter of this User's Guide.

PLAYBACK

Previewing the Project

You have several possibilities to preview the clip in the target window:

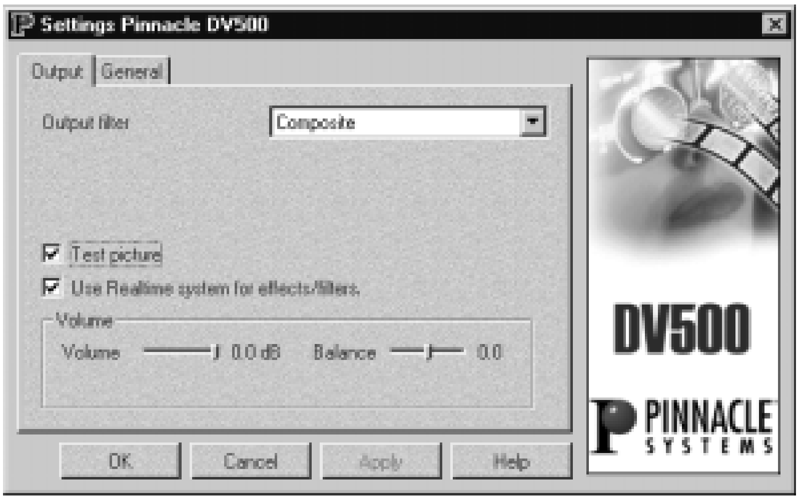
- You can scrub in the timeline using the cursor in the time ruler.
- If the timeline or monitor Window is activated, you can start the preview from the current cursor position pressing the <space bar>. Pressing the <space bar> again stops the preview.
- You can start the preview clicking on the *Play* button of the *Target* window. Clicking on the *Stop* button stops the preview.

Important: Only real-time effects such as the Pinnacle transitions can be seen in the preview. All other effects will show the current video frame and a red cross on playback until they are rendered by setting the work area appropriately and pressing <Enter>. (see the “Rendering the Project” section as of page **Fehler! Textmarke nicht definiert.**).

Setting the Output Options

Before playing or rendering the project you should review and change the output settings using the DV500 Control. To do so, click right on the *Instant Video* window and choose the *Settings...* command.

The DV500 Control window appears.



Settings Pinnacle DV500

Output filter: Composite

☑ Test picture

☑ Use Realtime system for effects/filters

Volume: 0.0 dB

Balance: 0.0

The settings dialog is described in detail in the “Pinnacle Control” chapter in this User's Guide. In addition, clicking the *Help* button will also display the same information.

Click on the *Output* tab. Here, you can adjust an output filter to optimize the video quality for the selected output and adjust the audio level. Click on *OK* to close the dialog.

The Volume slider in the output settings sets the upper limit of the audio level that gets sent to the analog outputs. In addition, the speaker icon button in the Premiere Monitor window allows you to attenuate or mute the audio output.

These options are not available if a DV device is connected. With a DV device you can activate the 16:9 DV output format option.

OUTPUTTING THE PROJECT

To output the project,

1. Select the work area so that it covers the parts of the project that need rendering (and that you want to render now).
2. Press the <Enter> key.

   Adobe Premiere asks you to save the project.
3. Click the *OK* button.
4. Change to the drive and into the directory where you want to save the project. Use the drive that is reserved for video files.
5. Enter the file name and click on the *Save* button.

   The *Building Preview* windows appears. The estimated remaining time is displayed. First the video data, the transitions and the filters are rendered (Pinnacle Systems’ transitions and effects need not to be rendered). Then in a second render process the audio data are rendered.

After the render process, playback will start automatically at the beginning of the work area. You will now see **all** effects, even the non-real-time effects.

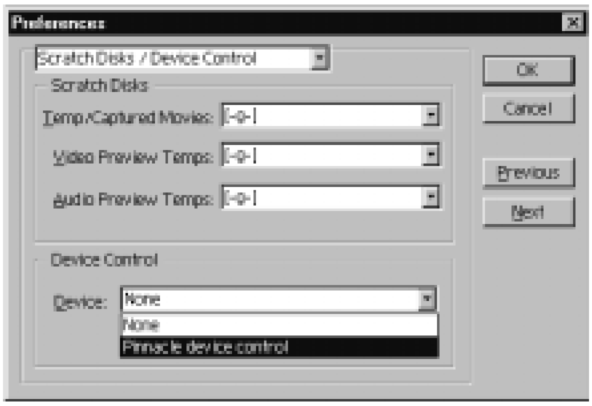
DEVICE CONTROL

For a list of compatible DV devices, please refer to our website under `http://www.pinnaclesys.com`.

The DV500 board can control DV devices connected via the 1394 connection, and can query information from the device like time code, for example. The device control function of the DV500 is capable of controlling DV devices that are connected to the board via the 1394 cable.

Before you begin controlling your DV device, you must configure the device control and Premiere for your device.

1. In Premiere, click the *File* menu and then the *Preferences* command. Select the *Scratch Disks / Device Control* command.



Scratch Disks / Device Control

Temp/Captured Movies: [-e-]

Video Preview Temps: [-e-]

Audio Preview Temps: [-e-]

Device: None

2. In the device control list box, select the entry: *Pinnacle device control*.

Operating the device control

The 1394 device control of the DV500 supports the following functions:

- Frame forward, frame backwards[*]
- Export to DV tape, insert edit[*]
- Position information (the time code)
- Locate commands , seeks to a specific time code[*]
- Basic functions (Stop/Rewind/Fast Forward/Playback/Pause)
- Batch capture, in combination with any capture plug-ins
- Jog Shuttle functions

The device controls are accessible in various Premiere windows. Consult the Premiere user manual for details on how to control a device from Premiere.

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[*] These functions are not supported by all DV devices.

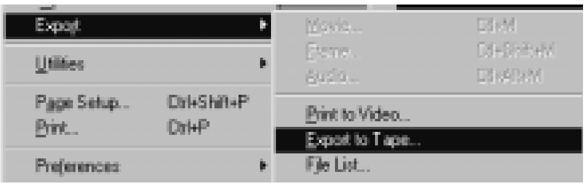
Export to DV tape

For record and insert/assemble edits you need DV devices that support these functions. Consult your video recorder/camcorder user manual to find out which functions your device supports. The device control will determine your device's scope of functions and will only offer those functions that your device supports.

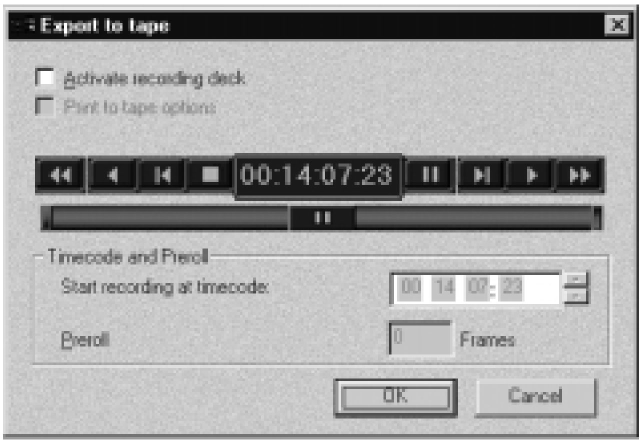
Although the device control supports functions such as record and insert cuts, no guarantee of clip playback precision can be given. It is Premiere that plays the video clip, and not the DV500 device control. Please consult Adobe Premiere's technical support if you should find there are irregularities in video playback.

Under Premiere, the DV500 supports export of video data to tape.

- In Premiere, click the *Export and Export to Tape* command in the *File* menu.



The following dialog box appears:



☐ Activate recording deck

☐ Print to tape options

Start recording at timecode: 00 14 07 23

Preroll 0 Frames

Certain device control options can be activated.

- *Activate recording deck*
  Select the *Activate recording deck* option if you want to use the device control to synchronously set the connected DV device to the record mode. This is required to record video data to tape.
- *Print to tape options*
  These settings allow a frame accurate insert/assemble cut if the connected DV device is supporting this function. Otherwise this option is greyed.
- *Time code*
  You can enter a start time code that is used for the current project. Further, you have the possibility to adjust the desired target time code yourself by using the device control buttons. Just search the position on the tape where you want to insert the project.
- *Preroll*
  The *Preroll* field allows you to fine tune the synchronous start of playback and recording.

Once you have made the required settings, Premiere switches to the playback mode to prepare the required operations and starts playback. During operation your PC screen will be blacked. After playback, Premiere switches back to the edit mode. You may have to repeat the settings just defined because they are not stored.

Adjusting the device control accuracy

You can use the following steps as a guideline for fine tuning the export to tape function.

- Stripe a DV tape, the tape should contain continuos time code. Switch your DV device into the *Camera* mode, rewind the tape and while the lens is darkened push the record button until the tape is completely recorded.
- Select Export-to-tape as described above.
- Enter a start time code. Save the in and out time code to a piece of paper
- Hit Enter to start operation.
- After the export-to-tape operation is complete use the device control (you must select Movie capture) or the remote control to seek to the start time code. Check the discrepancy between the first recorded frame and the desired tape location. This difference should be used the next time you repeat this operation in the preroll setting.
- Check that recording started with the first marked frame of your project.
- Check that recording stopped at the out-time code.
- Repeat this procedure until you find the preroll value that works the best.

If you find that recording started or ended inaccurately we recommend that you use black frames at the beginning and at the end of your video production to ensure that the total production is recorded.

Note that the export-to-tape accuracy depends on the DV camcorder or VCR that is used. Pinnacle Systems cannot guarantee that this function is supported by all DV devices.

Discrepancies

Suppose that you wanted to start the cut at time code 01:00:00:00. What was the frame number at the start of the cut after the project was transferred? If it was at 01:00:00:01 or more, the clip was started too early. Therefore, you should enter a smaller number of frames under “Pre-roll”. Repeat the test until you arrive at a satisfactory result.

If the first frame at the start of the cut was black or if you saw repeated frames, the clip was started too late. In this case, you must set a higher number of frames for the “Pre-roll”.

Premiere and time code

Internally, Adobe Premiere assigns frame numbers to your recorded clips instead of genuine time codes (this applies to all versions of Adobe Premiere). Frame numbers are random, automatically incremented numbers that, above all, facilitate the work of programmers. However, as one and the same frame number may correspond with one of three different time code values, depending on the time code format used, problems may be encountered if the correct time code format is not set. This may be relevant in the following situations:

- You manually enter a batch list with the wrong timed code format, or
- You use Premiere's logging function without device control in the video recording window (Movie Capture).
- The time code format in the recording window does not match the current tape format that is currently being logged.

This may lead to various errors like the following:

- “Time code not found” error message
- The time code on your clip is offset by a few seconds
- Recorded clips begin with a wrong time code

The reason for this is fairly basic. If you choose a time code of 01:00:00:00 for the starting point, Adobe Premiere may interpret this value depending on the format of the digitized video:

- NTSC (NDF time code) 108,000 frames
- NTSC (DF time code) 107,892 frames
- PAL 90,000 frames

A new feature in Premiere is the ability of displaying the time code of your clip and monitor windows in different ways, some of which may be confusing. In turn, this may lead to errors if you attempt to calibrate your time code discrepancy or to manually enter a batch capture list. Premiere allows you to adapt the time format of the monitor or clip window. However, this **does not** affect the video recording window. This is a general setting that does not change automatically when you load a clip with a different format. The fact that the time base of a clip can also be displayed incorrectly makes it difficult to determine the time code format of a clip. If you wish to determine the actual time code format of a clip, you must call up the *Properties for* command from the *File* menu while the clip in question is displayed in the monitor or the clip window. You will find further information on this topic in the Adobe Premiere manual.

DV time code

DV devices use a Drop Frame or DF time code (NTSC only). It cannot be set to a specific default, i.e. new tapes always begin at 00:00:00:00. Nevertheless, this is exact and returns clear values for single frames. When working with DV material, select “Drop-frame time code” in the Premiere project settings.

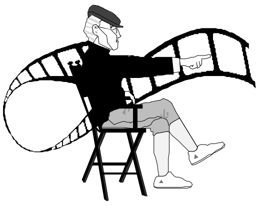
Drop frame time code

NTSC video (the US standard) is based on 30 frames per second almost. The exact frame rate is 29.97 frames per second, which corresponds to a mismatch of 3% per second. This is why video engineers developed the DF system, where 2 frame numbers each minute – with the exception of each 10th minute – will be skipped. Actual video frames will not be skipped, just the numbers in time code used to count them. One important reason for the use of the DF time code is that the timing of long videos will be more precise.

In figures, it looks like the following:

Non Drop	Drop
00:01:00;00	⇒ 00:01:00;02
00:01:00;01	⇒ 00:01:00;03

Please note that this applies only to every 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th and 9th minute, but not to the 10th, 20th, 30th, 40th, 50th or the 0 minute.



Chapter 8:
DV500 Control

Starting the Pinnacle Control from the Control Panel

You have two possibilities to start the Pinnacle Control tool:

- Click the *Start* Menu, the commands *Settings* and *Control Panel* and double-click the Pinnacle Control icon
- Click the *Start* menu and the commands *Pinnacle, Tools* and *Pinnacle Control*.

Important: Settings that you change from the Windows Control Panel or in the Pinnacle program group (Pinnacle Control) are global settings. The settings take effect when video clips are played back, for example, via the Media Player or the DV500 is used with other applications.
The control program is also available to you within Adobe Premiere. The settings that you make here, for example, by selecting a Pinnacle Preset, apply only in Adobe Premiere and are saved with every project.

Starting the DV500 Control from Adobe Premiere

To start the DV500 control under Adobe Premiere:

For the input options,
click with the right mouse button in the *Movie Capture* window (*File* menu, *Capture*, *Movie Capture*) and select the *Settings*... command, or
select the *Project* menu and the *Settings*, *Video* command and click the *Configure* button.

For the output options,
click with the right mouse button into the Instant Video window and select the *Settings*... command.

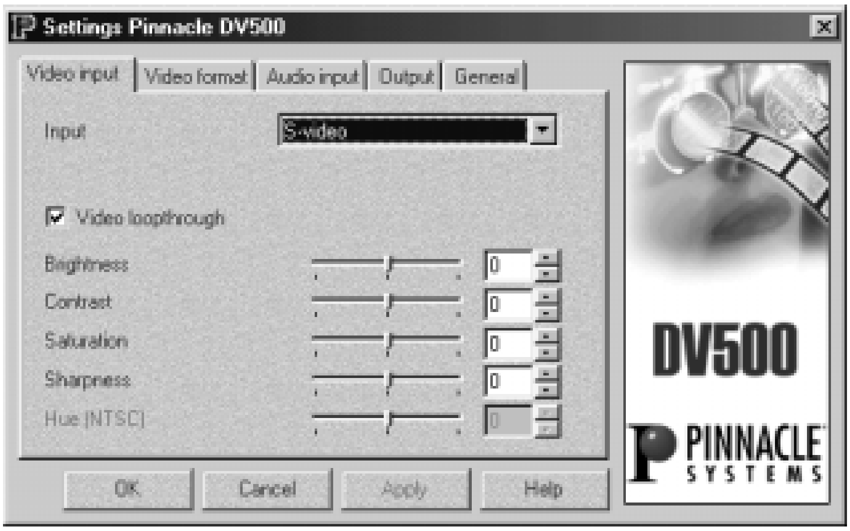
The DV500 Control offers the following tabs to modify your settings.

- Video input
- Video format
- Audio input
- Output
- General.

The tabs may offer different options—depending on the connected video device (S-video / Composite video or DV)

SETTINGS—VIDEO INPUT

The video input tab allows you to specify all settings concerning the video inputs.



Input S-video

☑ Video loopthrough

Brightness 0

Contrast 0

Saturation 0

Sharpness 0

Hue (NTSC) 0

Input

Determine the connector of the connected video source: *S-Video*, *Composite* or *DV device*. If the DV device is known, its name will appear in the checkbox.

Several sources can be connected at the same time, but only the selected signal will be digitized.

Video loopthrough

The *Video loopthrough* checkbox is enabled by default. If your player is at the same time the recording device, i.e. it is connected to the video input as well as to the video output, you need to **de**activate the *Video loopthrough* checkbox in order to avoid video feedback.

If a DV device is selected, this option is not available.

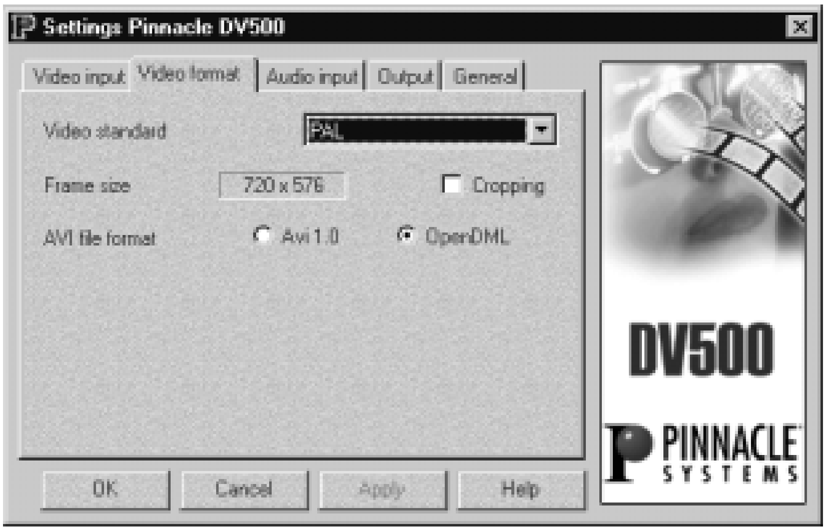
Brightness / Contrast / Sharpness / Saturation / Hue (NTSC)

Allows you to modify the *Brightness*, the *Contrast*, the *Sharpness* and the *Saturation.* Under NTSC you can additionally change the *Hue*.

This applies to analog sources only. If a DV device is selected, these options are not available.

SETTINGS—VIDEO FORMAT

Via this tab you determine the video format.



Video standard PAL

Frame size 720 x 576 ☐ Cropping

AVI file format ○ Avi 1.0 ● OpenDML

Video standard

Here, you determine the video standard of the connected video source: PAL or NTSC. The default setting is the video standard that you have selected during the installation of DV500. Note that products bought in the USA only support the NTSC standard.

Frame size

The full frame size (checkbox *Cropping* **not** activated) offers you a frame size of 720 x 576 pixels for PAL and a frame size of 720 x 480 pixels for NTSC. This size is the standard resolution for MPEG2-coded video and provides best results when your production target is DVD or MPEG2-CD.

Cropping
If you enable the *Cropping* checkbox, a slightly smaller image section will be digitized (PAL: 704 x 576, NTSC: 704 x 480). This is useful if your video source does not supply the full 720 pixels horizontally, as it prevents black vertical lines at the sides of the video image, which can be especially annoying when using push transitions or picture-in-picture effects.

When using cropping, you can still export your project for DVD or MPEG2-CD production and the image size will be recalculated to the standardized 720x576 or 720x480 resolution. However, this will increase the rendering time for the export and may result in a loss of quality.

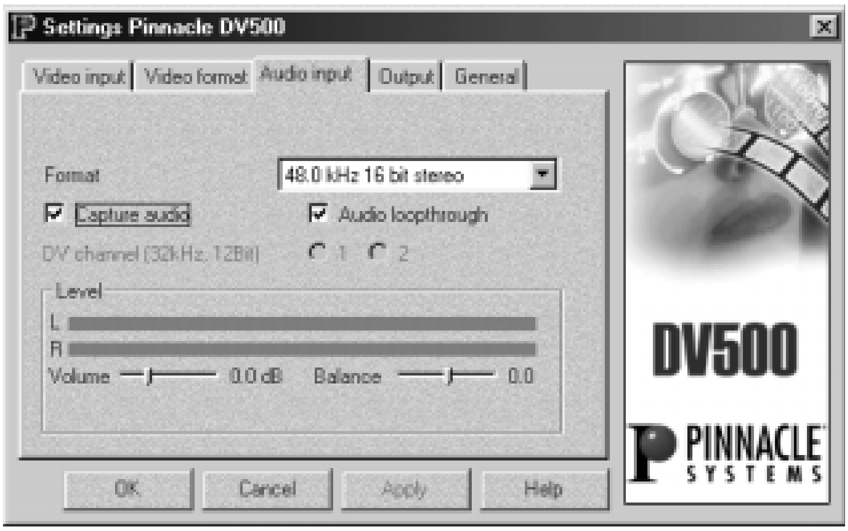
AVI file format

AVI 1.0
If you want to import an *.avi file into an application that does not support the *OpenDML* option, activate the A*VI 1.0* checkbox.

OpenDML
If you activate the *OpenDML* format, you can capture *.avi files, which exceed the 2 GB limitation.

SETTINGS—AUDIO INPUT

This tab allows you to specify the necessary audio input settings.



Format: 48.0 kHz 16 bit stereo
☑ Capture audio
☑ Audio loopthrough
DV channel (32kHz, 12Bit) ○ 1 ○ 2
Volume 0.0 dB
Balance 0.0

Format

Here, you select the format for audio recording of the video sequence.

Analog source For DVD select 48 kHz 16 bit stereo. For MPEG2-CDs, 44.1 kHz 16 bit stereo is more appropriate, as some PCs may not be able to play back 48 kHz audio.

DV source If you have selected a DV device as video input, the audio format is adjusted dynamically to the format of the DV devices. A preliminary selection is not possible.

Capture audio

Activate the *Capture audio* checkbox if you want to capture the clip with audio. Deactivate the checkbox for capturing without audio.

Audio loopthrough (for analog sources only)

The *Audio loopthrough* checkbox is enabled by default. If your player is at the same time the recording device, i.e. it is connected to the audio input as well as to the audio output, you need to **de**activate the *Audio loopthrough* checkbox in order to avoid audio feedback.

DV Channel (for 32 kHz only)

If there is no DV signal received by DV500, this option will be greyed.By selecting the option button 1 or 2, you determine whether the input signal will be recorded from channel 1 or channel 2. Note that DV devices provide two audio channels only if you selected 32 kHz 12 bit audio on your DV equipment at recording time.

Level (for analog sources only)

Volume / Balance
Moving the sliders Volume and Balance you can select the audio input level and balance. It should be set so that the VU meter stays in the green and yellow areas.

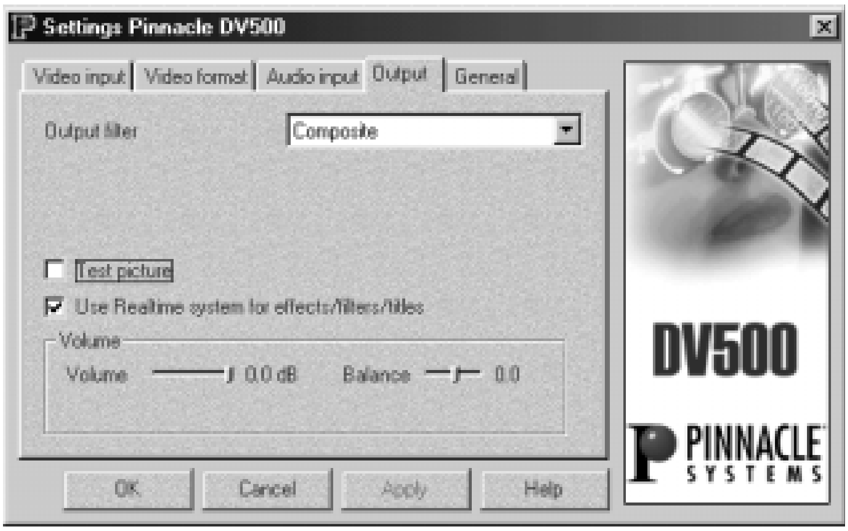
Peakmeter

If an analog input is selected a peakmeter displays the audio level.

SETTINGS—OUTPUT

The *Output* tab lets you determine the output settings for video as well as for audio. The appearance of the *Output* tab varies according to the connected video device: analog (S-video / Composite video) oder digital (DV device).

***Output* tab**
(analog device)



Settings Pinnacle DV500

Output filter: Composite

☐ Test picture

☑ Use Realtime system for effects/filters/titles

Volume
Volume 0.0 dB
Balance 0.0

Output filter

Here, you select if the output filter is optimized for the S-Video or the Composite video output. Set this option according to the output you connected your recorder to. Note that all outputs will always show the video signal, but the one selected here will provide the best-quality signal.

When outputting to a DV device, this option will not influence the filtering.

Test picture

If the checkbox test picture is activated the internal test picture of the encoder will appear on the S-Video and composite video outputs and indicate the correct function of DV500.

The test picture will never appear on the DV output.

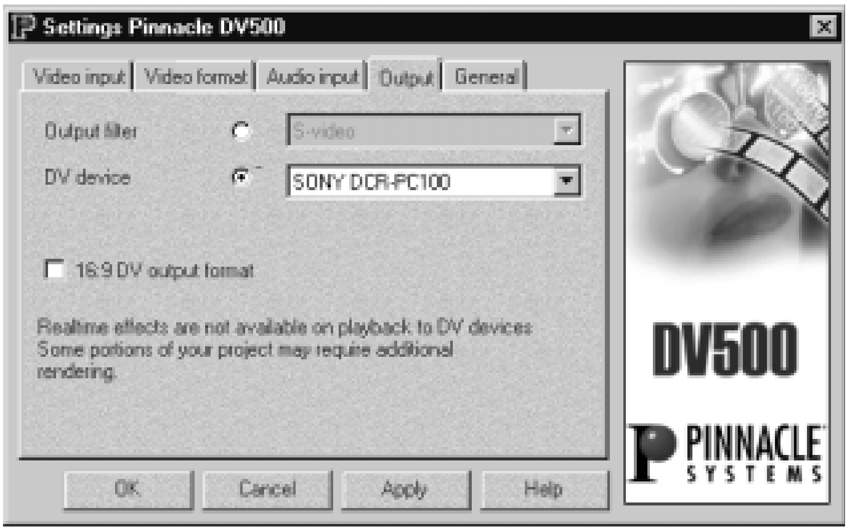
Checkbox Real-time

If you deactivate the real-time option, the real-time effects have to be rendered. You should only deactivate the real-time effects if you realize that the project playback cannot be done jerkyless.

Volume

Volume / Balance
Moving the sliders *Volume* and *Balance* you can select the audio output and balance level. Both sliders can be moved independently of each other. The set level will be displayed.

***Output* tab (DV device)**



Output filter ○ S-video

DV device ● SONY DCR-PC100

☐ 16:9 DV output format

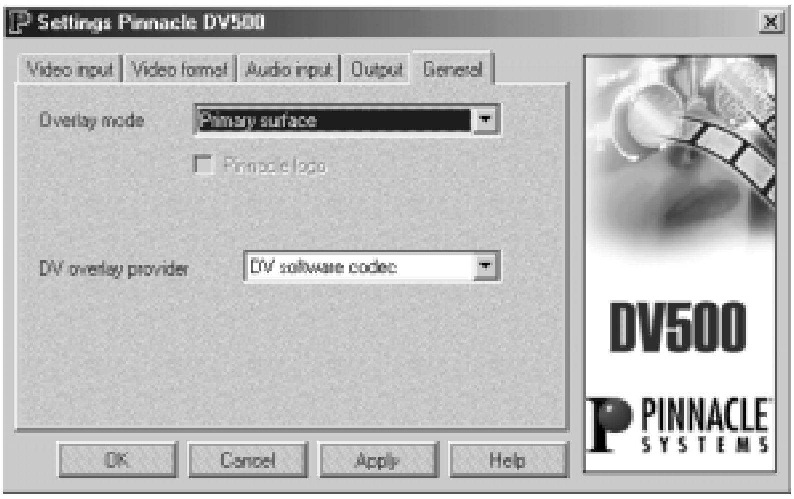
Realtime effects are not available on playback to DV devices. Some portions of your project may require additional rendering.

16:9 DV Output format

If you activate the*16:9 DV output format* checkbox, the video is output in the 16:9 DV format (”wide-screen format”).

SETTINGS—GENERAL

This tab allows you to determine the overlay settings during recording and playback.



Settings Pinnacle DV500

Overlay mode: Primary surface

☐ Pinnacle logo

DV overlay provider: DV software codec

Mode

Here you can determine the overlay mode during recording and playback.

- *Overlay Surface*
  As the overlay surface can be produced with a considerable less amount of system resources and additionally without any limitations to the resolution, you should generally—if your graphics board supports it—activate the *Overlay Surface*.
- *Primary Surface*
  Use this option if your graphics board does not support the Overlay Surface or if you notice that buttons or other screen elements to not get displayed correctly.
- *Off*
  There is no video display on the PC screen during recording and playback.

Pinnacle logo

If you activate the *Pinnacle lo*go checkbox, the Pinnacle logo will be displayed during recording and playback. This setting is available only if you selected *Overlay Surface* as the mode. Note that the logo is seen on the PC screen only, it will not show on the video outputs nor will it get recorded with the video when you capture.

DV Overlay Provider [*](connected DV device only)

Here, you determine where the overlay appears. Select one of the following options:

DV software codec
The overlay will be displayed via the software.

S-Video
The overlay is taken directly from the S-video output of the video source.

Composite
The overlay is taken directly from the Composite video output of the video source.

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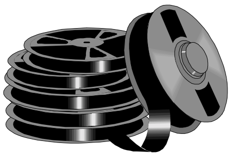
[*] This option is not available if you open the *General* tab via the Instant Video window.



Chapter 9:
Working with DV material

This chapter introduces the step-by-step process of capturing DV clips from tape using DVTools, editing DV using Adobe Premiere, and printing DV back to tape. It also explains how to capture a single frame from your DV tape. The combination of the DVTools and Adobe Premiere lets you get the most out of your DV footage.

Preparations

Before you start working with DV material it is advisable to check your system performance using the DVExpert. The DVExpert is located in the *DV500* Program Group. In order to provide you with realistic results, the disk being tested should be defragmented. If you use more than one hard disk in your system, you should test them all and use the hard disk with the fastest data rate.

For more information on the DVExpert, please click on the help button in the DVTools.

Note that the DVTools require at least a 16-bit color resolution and an 800 x 600 resolution. If your display is set to fewer colors, an error message will appear after starting the DVTools.

MAKING MOVIES

In planning and capturing your movie, use the DVTools. DVTools allows you to scan the DV tape, store clip locations, view the individual clips, redefine and edit clip in points and out points (i.e., start and end markers) and re-order clips. Once you have completed these steps, you can create separate AVI files for each clip. After these AVIs have been created you can use Adobe Premiere to add titles, transitions and special effects. You can then output the final DV back to DV tape or to conventional analog tape.

The difference between scanning and capturing

Scanning the tape does not capture the video and save it to the hard drive. Scanning merely identifies all the clips on the tape so you can see which clips are candidates for your final video, and which aren’t useful at all.

Capturing, on the other hand, saves the digital video on the hard drive. At that point, with the digital video on your computer’s hard drive, you can edit the clip using Adobe Premiere.

Neither scanning or capturing modifies your original videotape in any way. Your original shots remain in their original form and quality.

Some remarks on shooting DV footage

When shooting DV, you can use as many DV tapes as you like. DVTools is capable of keeping track of as many DV tapes as you wish to scan. When you scan the video tape later, the software will automatically detect the start of a clip at each place where you started the recorder. Conversely, those places where you stopped recording will automatically be detected as ends of clips.

When shooting video footage, make sure the camcorder is running in *Camera* mode.

Checking preferences in DVTools

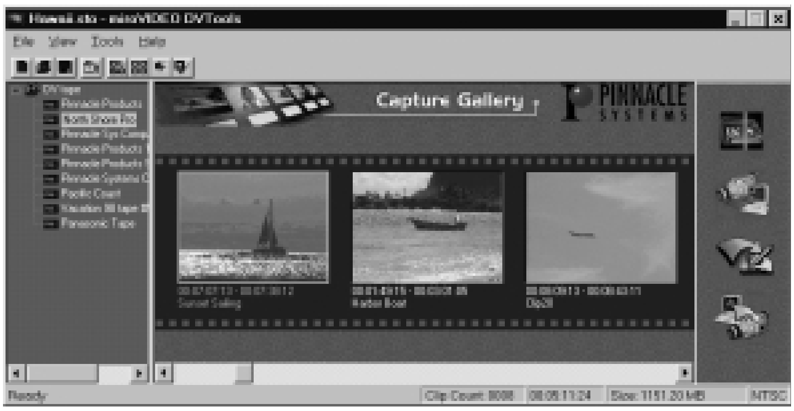
Before using the DVTools to capture your video footage, it is advisable to check the preferences with regard to your television standard and some recording parameters. In Western Europe (except for France), the PAL standard is used; the standard used in the USA is NTSC.

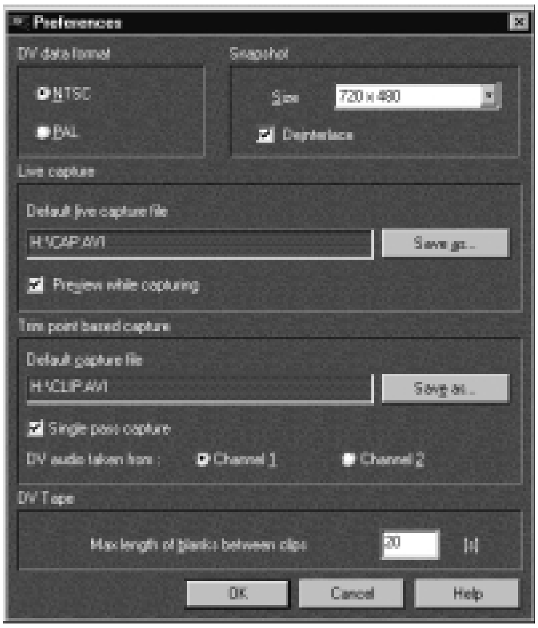
To check the preferences in the DVTools, proceed as follows:

1. **Launch the DVTools.**

   Click *Program Files* in the *Start* menu. Select the program group *DV500* and click on *DVTools*.

   The *Capture Gallery* appears.





Preferences

DV data format

● NTSC

○ PAL

Snapshot

Size: 720 x 480

☑ Deinterlace

Live capture

Default live capture file: H:\CAP.AVI

☑ Preview while capturing

Trim point based capture

Default capture file: H:\CLIP.AVI

☑ Single pass capture

DV audio taken from : ● Channel 1 ○ Channel 2

DV Tape

Max length of blanks between clips: 20 [s]

3. **Checking the TV standard.**

   In the *Capture Gallery*, select the *Tools* menu and the *Preferences* menu item. This dialog will be displayed the first time you launch DVTools. The program can automatically detect the video standard if the DV device is connected to the card and is switched on. You must not overwrite this setting.

3. **Choose your preferred capture method**

   You can select between a single pass capture and a multi pass capture. Default is single pass capture since your PC system should be fast enough to capture DV footage in one pass. If you find too many dropped frames on the capture you might select the multi pass capture method.

4. **Select the capture drive.**

   Under *Trim point based capture*, select the hard drive and the directory where you want to save the video. Please verify that enough storage space is available on this drive.

5. **Select the audio channel.**

   DV devices support two audio channels on a 32kHz setting. Select the channel from which you want to capture the sound.

6. **Select an appropriate value for the *Length of blank*. Click *OK*.**

   When scanning a DV tape containing long blank sections where no DV footage has been recorded, the DVTools might abort the scanning process in the middle of such a pause because it assumes that the blank section is the end of the recording. To ensure that the DVTools continue to scan the tape, you can enter a value (in seconds) under *Length of blank*. This value determines the maximum length of a blank section which the DVTools will accept as a pause but not as the end of a recording.

Scanning a DV tape for clips

Once you have set the preferences, you can use DVTools to scan your DV tape(s) for clips. A clip is defined as a video sequence located between an in point (start of take) and an out point (end of take).

To scan a DV tape for clips, proceed as follows:

1. **Connect DV equipment.**

   If you haven't already, connect your DV camcorder or DV video recorder to the DV500 board.

2. **Turn on your DV equipment.**

   Turn on your DV camcorder or DV video recorder. Make sure that your DV camcorder is running in *VTR* mode.

3. **Insert DV tape.**

   If you haven't already, insert the DV tape in your DV equipment.

4. **Scan DV tape.**
   You can start the scanning process in three ways:

   - Click the *Tape Scan* button in the right section of the *Capture Gallery* (see icon).
   - Right-click into the *DV Explorer* (mainly white area in the left section of the Capture Gallery) and select *Scan DV tape...*
   - From the *Tools* menu, select *Scan DV tape*.

   It is also possible to scan the tape manually (*Live capture*) and capture the video simultaneously.

   The DV tape is then rewound to the beginning and the DVTools display a dialog box showing the progress of the scanning process. To abort this process, click on *Cancel*.

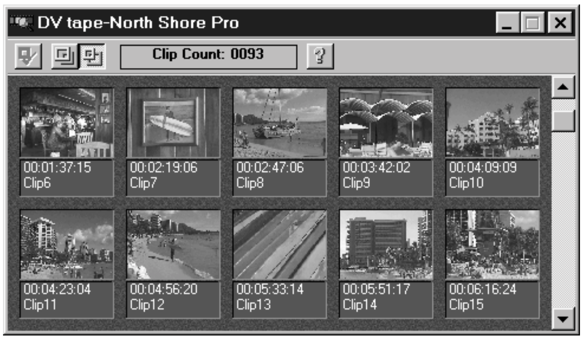
5. **Enter a name and description for the DV tape or rescan the tape.**

   After the tape has been rewound, DVTools will identify the tape.

   - If the tape is unknown to the tape database, the program will prompt you to enter a name and a description for the tape. After you have typed in the information, the tape description will be stored in the database.
   - If the tape is already known, the program will allow you to abort the tape scan or to rescan the tape. The clips from the previous scan are remembered and you will be promoted as to where to start the new scan. This is helpful if you have recorded new footage to a tape you have previously scanned. You can scan in the new scenes, updating the existing scan gallery, without having to re-scan the entire tape.

Next, DVTools scans the DV tape for clips. The scan process takes as much time as it would take to play back the video footage on your tape. For example, a 30-minute tape will take approximately 30 minutes to be scanned if the tape is completely filled with video information. If the tape only contains 15 minutes of video data the scan will need approx. 15 minutes.

Once the software has finished scanning the tape, a window appears in which all the clips found on the video tape are depicted as „poster frames“ (the first frame in a clip). This *Tape Gallery* will be brought up any time after you scanned a tape.



6. **Scan additional DV tapes if necessary.**

   If you want to use several video tapes for your movie, have DVTools scan for clips as described above.

Viewing clips and adding trims

To view your DV at full-screen size, a television set or video monitor must be connected to your DV camcorder or DV video recorder. There is also a preview window in the *DV Device Controller* that plays back your DV in a small thumbnail window with a reduced resolution.

To view clips, proceed as follows:

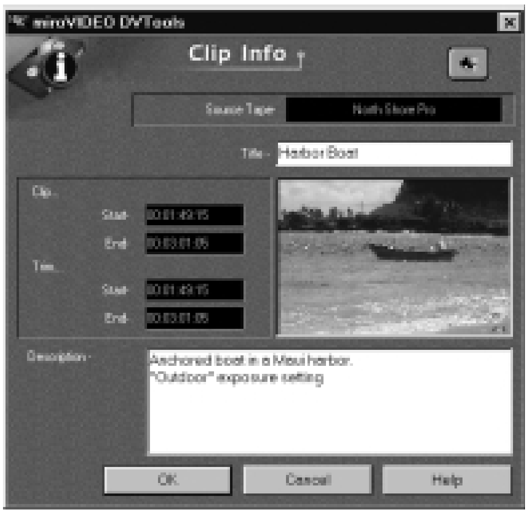
1. **Open DV tape (if necessary).**

   If the *Tape Gallery* with the clips of your video tape is not displayed already, double-click a database name in the *DV Explorer*. The tape in question must be in the DV camcorder.

   A *Tape Gallery* then appears in which all the clips on your video tape are depicted by the first frame (poster frame) of each clip.

2. **Playing back clips.**

   To view a clip, first double-click on the desired clip. The *Clip Info* window will then appear.



Source Tape: North Shore Pro

Title: Harbor Boat

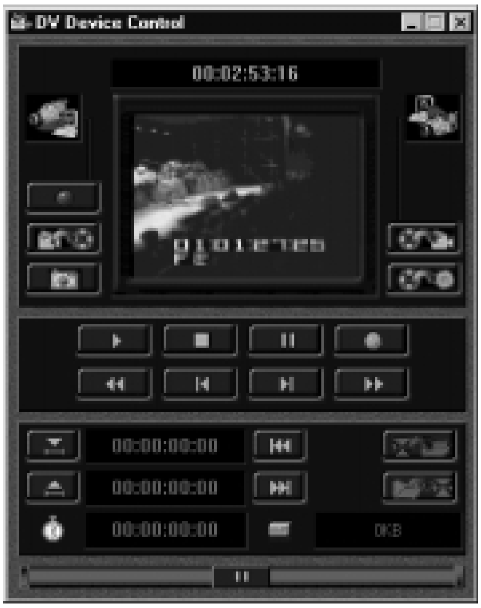
Clip: Start 00:01:49:15, End 00:03:01:05

Trim: Start 00:01:49:15, End 00:03:01:05

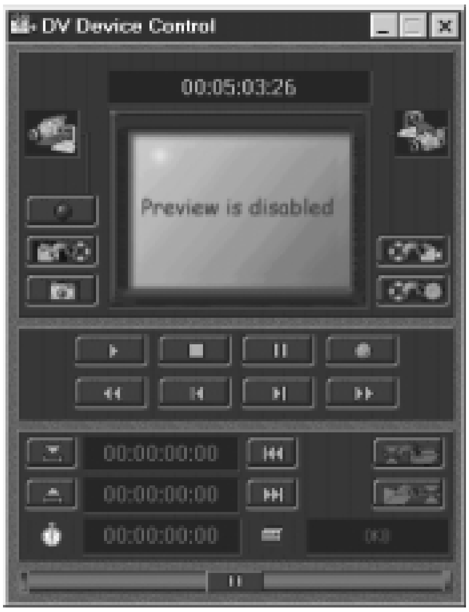
Description: Anchored boat in a Maui harbor. "Outdoor" exposure setting.

   The *Clip Info* window displays the title, the time code, and the trim points (if there are any). If you wish to do so, you can enter a description for your clip.

   To rewind or forward the tape to the position where the clip is located, click on the 👁 (eye) button. The DV device will take a while to find the start of the clip.



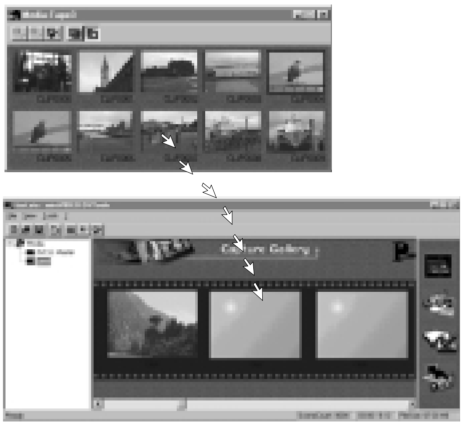
The *DV Device Controller* will appear. You will know that the tape is positioned to the start of the clip when the time code displayed at the top of the window is identical with the clip start displayed at the bottom of the window.



The *DV Device Controller* lets you control your DV device. The video tape does not automatically stop when it reaches the end of a clip. To pause the playback, click on the *Pause* button.

3. **Choose the clips you want to capture.**

   Once you have „sifted through“ your video footage, you can choose the clips you actually want to capture. To do so, drag the desired clips from the *Tape Gallery* and drop them in the *Capture Gallery*[*]. You can arrange the clips in the *Capture Gallery* in any order.



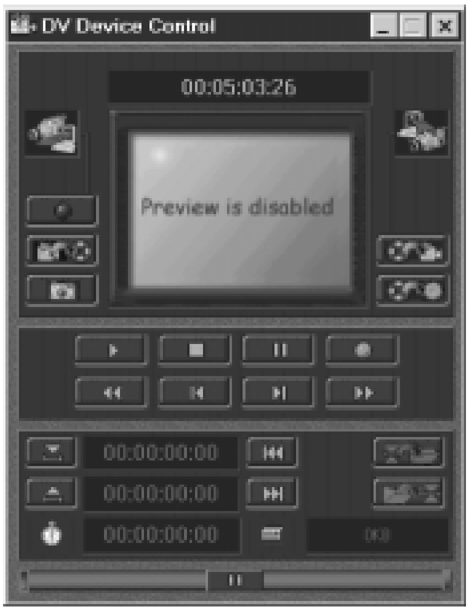
---

[*] Drag & Drop:
Left-click the desired element. Hold the mouse button down and drag the element to the desired position. To “drop” the element, release the mouse button.

4. **Add trims.**

   Sometimes you may not want to use an entire clip, but rather only part of a clip. In that case, you can edit the clip in question using the *DV Device Controller*.
   You can define the in point and out point of a clip using the (in point) and (out point*)* buttons. You can either click on the buttons during playback, or pause the tape at the desired location and then click on these buttons. You can also forward and rewind the tape using the slider control at the bottom of the *DV Device Controller* window (jog-shuttle function). Once you have finished inserting the points in the clip, click (*Apply)* to save the trim points.

   The original trim points are still stored in the clip database and can be restored at any time by clicking on .



5. **Save the *Capture Gallery* file.**

   Save the *Capture Gallery* file with the added clips and edits. To do so, select the *Save as...* option in the *File* menu. These files are saved with the extension *.sto.

Capturing DV (generating AVI files)

Now that you have selected the clips for your movie, you can generate AVI files.

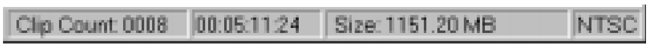
To generate AVI files from the clips, proceed as follows:

1. **Open the *Capture Gallery*.**

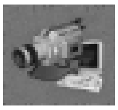
   If you have not done so already, open the *Capture Gallery* you want to capture. To do so, click on the *File* menu in the DVTools and select *Open Capture Gallery*. Here you can select the *Capture Gallery* (*.sto file).

2. **Check file size.**

   The status bar at the bottom of the *Capture Gallery* shows the clip count, the total duration, and the total size of the AVI files that will be generated. If you like to verify that you have enough disk space for capturing the clips from this Gallery, click on your drive in Windows 95 *Explorer*. The free space on your hard disk will be displayed. However, DVTools will check if there is enough disk space available before capturing.



Clip Count: 0008 | 00:05:11:24 | Size: 1151.20 MB | NTSC



3. **Capture AVI files.**

   To create AVI files from the clips in your *Capture Gallery*, click the *Capture* button located on the right-hand side of the *Capture Gallery*.

4. **Enter file name and directory.**

   If you do not want to use the default drive you chose in the *Preferences* dialog, enter a file name and choose a directory to which you want to copy the AVI files. All clips located in the *Capture Gallery* will then be captured. The AVI files will be numbered according to the order of capturing.

DVTools use a unique technology, in multi-pass capture mode, allowing lossless capture also on slower computer systems. For that reason, DVTools may search the DV tape one or more times to retrieve dropped frames.

Editing AVI files using Adobe Premiere

The DVTools allow you to directly launch Adobe Premiere without having to do this from the Windows *Start* menu.

If you want to output your AVI file to the DC30 board, you must select the *Optimized display for DC30* option in the DV Configuration tool.

To edit your AVI file(s) using Adobe Premiere, proceed as follows:

1. **Start Adobe Premiere.**

   To start Adobe Premiere, click on the corresponding button on the right-hand side in the *Capture Gallery*. (If Adobe Premiere is not installed on your system, this button will be disabled.)

2. **Select a Project Preset.**

   Select an appropriate Project Preset, depending on whether you are using PAL or NTSC and on whether you want to output your final DV file to a DV tape or to an analog video tape via DC30.

3. **Import AVI file(s).**

   To import one or more AVI files, go to the *File* menu and select the menu commands *Import* and *File...* . Select the AVI file(s).

4. **Edit AVI file(s).**

   At this point you can add effects and process your video. If necessary, select the display mode for all frames of the video clips under *Windows, Construction window options, Track format*.

5. **Make a movie.**

   Use the Instant Video tool to create your final movie and to save it back to the DV tape. For more information on Instant Video, please refer to chapter 12. Press the <Enter> key.

CAPTURING SINGLE FRAMES (SNAPSHOTS)

The DVTools allow you to capture still images with the DV recorder, the camcorder in VTR mode or directly from its lens.

Checking preferences in DVTools

Before using the DVTools to capture single frames from your video footage, it is advisable to check the preferences with regard to your television standard and the frame size.

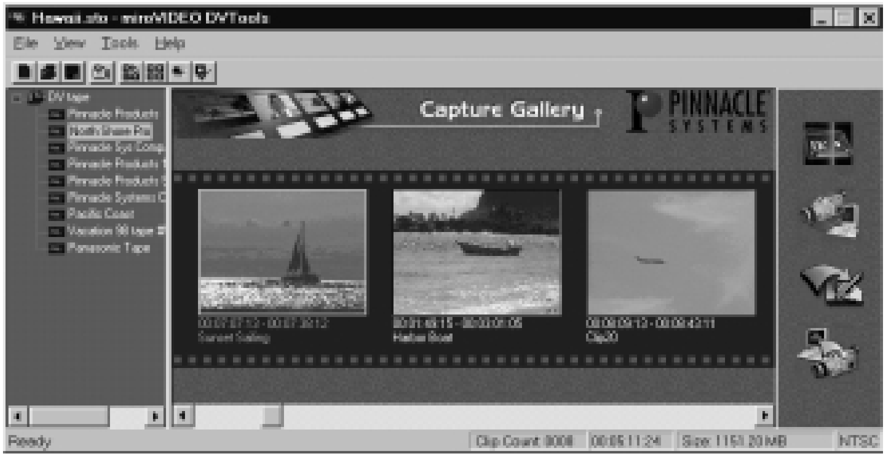
To check the preferences in the DVTools, proceed as follows:

1. **Open the DVTools.**

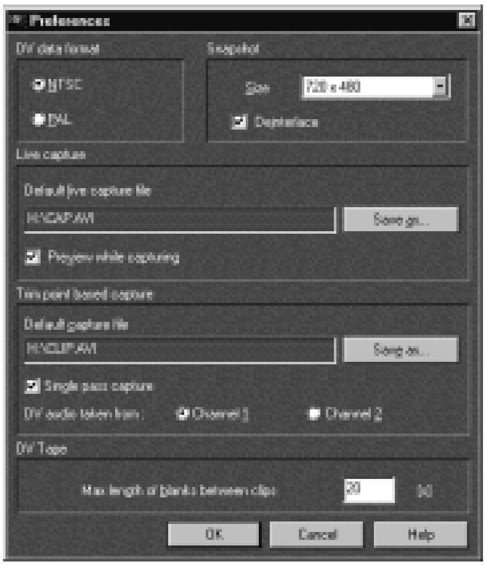
   Click *Program Files* in the *Start* menu. Select the program group *DV500* and click on *DVTools*.

2. **Checking the TV standard.**

   In the *Capture Gallery*, select the *Tools* menu item...



   ... and the *Preferences* menu item.



DV data format
● NTSC
○ PAL

Snapshot
Size: 720 x 480
☑ Deinterlace

Live capture
Default live capture file: H:\CAP.AVI
☑ Preview while capturing

Trim point based capture
Default capture file: H:\CLIP.AVI
☑ Single pass capture
DV audio taken from: ● Channel 1 ○ Channel 2

DV Tape
Max length of blanks between clips: 20 [s]

The DV data format will be autodetected at any time while DVTools is running. You must not overwrite the setting.

3. **Select an image size for your BMP file.**

   From the *Snapshot* list box select the size you want your frame to have. The table below states the BMP resolutions that will result from the different settings.

Setting	NTSC	PAL
Full size	720 x 480 (full TV size)	720x576
Quarter size	360x240	360x288
1/16 size	180x120	180x144

If you want to de-interlace your bitmaps, select the *De-interlace* option. Click on *OK*. (For more information on the *De-interlace* feature, read the „De-interlace“ section at the end of this chapter).

Capturing single frames

Once you have set the preferences, you can use the DVTools device controller to capture a single frame from either recorded video footage or directly from the lens.

To capture a single frame, proceed as follows:

1. **Connect DV equipment.**

   If you haven't already, connect your DV camcorder or DV video recorder to the DV500 board.

2. **Turn on your DV equipment.**

   Turn on your DV camcorder or DV video recorder. If you want to capture a single frame from your recorded video footage, make sure that your DV camcorder is running in *VTR* mode and that a suitable tape has been inserted.

   If you wish to capture a single frame directly from the lens, set your camcorder to the *Camera* mode and point it at the object you wish to capture.

3. **Open the *DV Device Controller.***

   To open the *DV Device Controller*, click on the (camera) icon in the DVTools window.

4. **Create bitmap.**

   If you are running in the *VTR* mode, search out the frame you would like to capture using the transport controls and click on the *Pause* button to stop the tape.

   Click on the (snapshot) button to temporarily store the image to RAM.

5. **Name and save the BMP file.**

   You can now enter a name and a location where you like to save your BMP file.

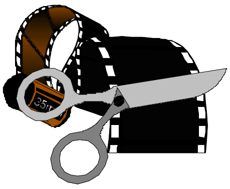
De-interlacing

The DV500 software automatically de-interlaces the images you capture from your DV tape. TV systems, such as NTSC and PAL use the interlacing technique.

TV images are not scanned (drawn) line by line, but first all odd lines (1, 3, 5 etc.) are drawn and in a second step all even lines (2, 4, 6 etc.) are drawn. The sections consisting of either odd or even lines are called fields.

When watching TV the human eye cannot distinguish the odd and the even lines but merges them so that they appear as one. When capturing a DV image, however, the resulting image would normally look distorted because the odd and the even frames are put together.

The DV500 software, however, compensates for this with the feature called de-interlacing by eliminating one field and generating a new enhanced image from the remaining field.



Chapter 10: DVTools

This chapter describes the DVTools in detail.

DVTools let you scan for clips on your DV tape, add in and out points, control your DV devices, transfer DV to your hard disk and back to DV tape.

DVTools consists of three main components: the *Capture Gallery*, the *Tape Gallery*, and the *DV Device Controller*.

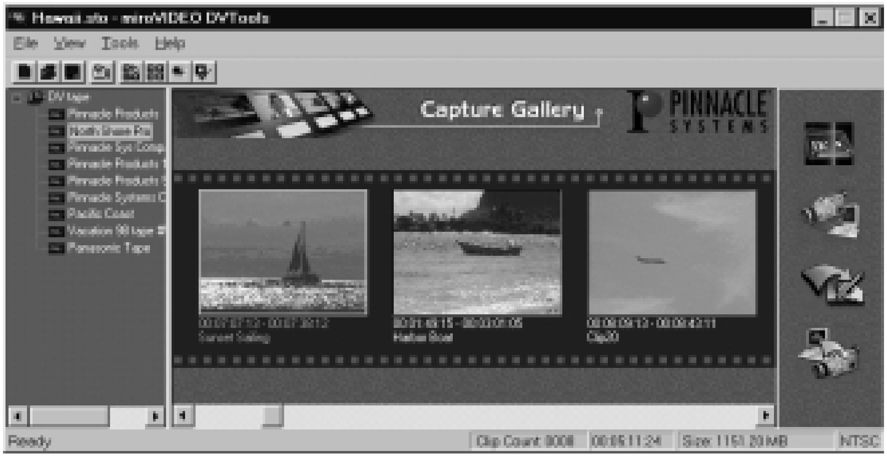
CAPTURE GALLERY

The most important workspace in the DVTools is the *Capture Gallery*. Here you can arrange the clips you want to capture, check the running time and file size of a movie, generate AVI files, open Adobe Premiere, and print AVI files back to tape.

To access the Capture Gallery,

- select *Program Files* from the *Start* menu. Select the *DV500* program group and click *DVTools*.

  The *Capture Gallery* opens.



The *Capture Gallery* consists of the menu bar, the tool bar, *DV Explorer*, the film strip, the DV buttons and the status bar. The following sections explain these individual components.

Menu bar

***File* menu**

New Capture Gallery:
Lets you create a new *Capture Gallery* database. *Capture Gallery* databases have the file extension ∗.sto.

Open Capture Gallery:
Lets you open an existing *Capture Gallery*.

Save Capture Gallery:
Lets you save the *Capture Gallery* database which is currently open.

Save Capture Gallery as:
Lets you save the database which is currently open under another name.

Last Capture Gallery:
Opens the *Capture Gallery* that has been saved last.

Exit:
Exits the DVTools.

***View* menu**

Add clips to Capture gallery:

Allows you to manually define clip segments to be added to the Capture Gallery. Useful when working with tapes that have very large or just one scene (recorded with no interruption for the entire tape).

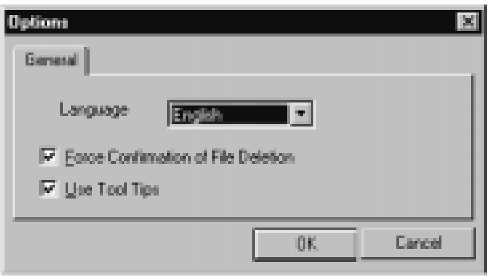
Thumbnails:
Toggles between the Clip Gallery and an overview window. If you enable *Thumbnails,* you can view more clips which provides a better overview.

Clip Info:
The *Clip Info* window displays the title and the description of the clip, the time code, and the trim points (if there are any). It also contains the *Play* button (eye).

Rename DV tape database:
Lets you rename an existing database. To rename an existing database, click on a database in the DV Explorer, select *Rename DV database* and enter a new name.

Delete DV tape database:
To remove an existing database, click on a database in the *DV Explorer*, select *Delete DV tape database*.

Options:
When clicking on *Options*, the following dialog appears:



Options

General

Language: English

☑ Force Confirmation of File Deletion

☑ Use Tool Tips

To select another language for the DVTools, you can choose the language you prefer from the list box.
When enabling *Force confirmation on file deletions*, you will be prompted to confirm that you want to delete the file every time you want to remove a database. Disabling this option avoids this request.
The *Use Tool Tips* option check box lets you toggle the little information windows that appear for the buttons.

***Tools* menu**

DV Device Controller:
*This option o*pens the *DV Device Controller*.

Scan DV tape:
Lets you scan a tape and create a *New database*. Instead of this menu item, you can also use the *Scan Tape* button located on the right-hand side in the *Capture Gallery*.

Seek start of clip:
When clicking on a clip in the *Clip Gallery*, the *DV Device Control* will be opened and the device will rewind the tape to the start of the clip.

Capture Scenes From Capture Gallery:
Use the *Capture* command to start capturing (transferring the DV clips to the hard disk) the clips you inserted in the *Capture Gallery*. Instead of this menu item, you can also use the *Capture* button located on the right-hand side in the *Capture Gallery*.

Start Video Editing Application:
Launches Adobe Premiere.

Print-to-DV-tape:
Use the *Print-to-DV-tape* command to start playing back the AVI clips back to tape. Instead of this menu item, you can also use the *Print-to-tape* button located on the right-hand side in the *Capture Gallery*.

Please note: You must always capture the clips, which means transferring them to your hard disk and converting them into AVI files, before you can record them back to your DV tape. It is **not** possible to scan a tape, arrange some clips in the *Capture Gallery* and print them back to the DV tape.

Preferences:
This option opens the *Preferences* dialog box.

Tool bar

The toolbar provides quick access to the following dialog boxes and windows:

Always present

Opens a new *Capture Gallery*.

Opens an existing *Capture Gallery*.

Saves the current *Capture Gallery*.

Opens the *DV Device Controller*.

Only appear when there are scenes in the Capture Gallery

Show all clips in the *Capture Gallery*.

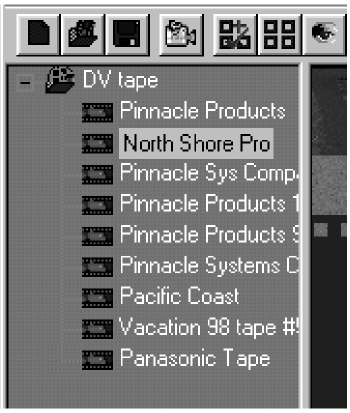
Manually add/remove clips in *Capture Gallery*.

Rewinds/fast forwards the tape to the start of the current clip.

Opens the *Clip Info* window.

DV Explorer

The DV Explorer has the look-and-feel of the Windows Explorer and provides a clear overview over the DV tapes you have already scanned. After you have scanned a DV tape, the DVTools will prompt you to enter a name for the database. This name will then appear in the DV Explorer. The actual directory with the media database files (*.sbd) is located on your hard disk in the DV500 directory, which is by default **`DV500/DVTools/Media`**.



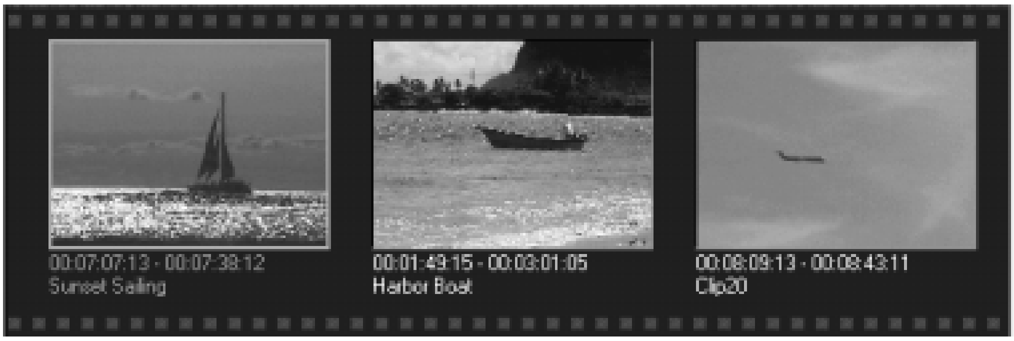
DV tape
Pinnacle Products
North Shore Pro
Pinnacle Sys Comp
Pinnacle Products 1
Pinnacle Products S
Pinnacle Systems C
Pacific Coast
Vacation 98 tape #
Panasonic Tape

To delete or rename the databases, select the *Delete database* or *Rename database* commands from the *View* menu.

Film strip

In the film strip you can arrange the clips you want to capture (as the name *Capture Gallery* infers) by moving them from a *Tape Gallery* to a film strip frame. To insert a clip from the *Tape Gallery* into one frame of a film strip, click on the clip, hold the mouse button down, drag the element to the desired position, and release the mouse button. To insert a clip, drag and drop it between two existing clips.

You can also replace the clip which has already been inserted into the film strip by dragging the desired one directly on top the one to be replaced.



DV buttons

The DV buttons provide the basic functions of the DV Tools.

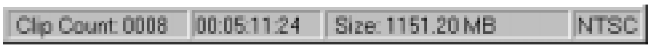
Tape Scan (New DV tape database):
This button lets you scan a tape and create a *New database*.

Capture scenes from Capture Gallery:
Use the *Capture* command to start capturing (transferring the DV clips to the hard disk).

Start Video Editing Application:
Launches Adobe Premiere.

Print to DV tape:
Use the *Print to DV tape* command to start recording the AVI clips.

Status bar



Clip Count: 0008 | 00:05:11:24 | Size: 1151.20 MB | NTSC

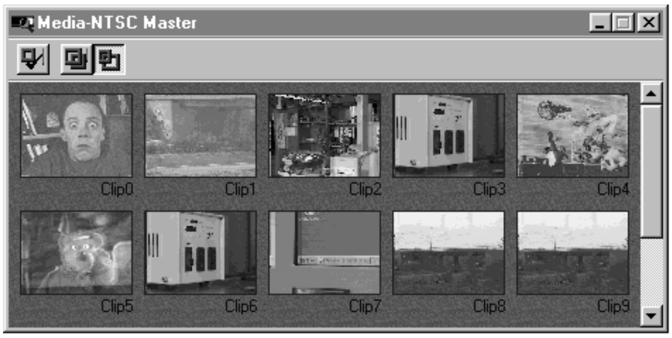
The status bar shows the number of clips inserted in the *Capture Gallery* as well as the running time and the expected file size.

The running time states the total duration of all clips which have been inserted into the *Capture Gallery* in time code format (hours:minutes:seconds:frames).

The expected file size states the sum of the file sizes (in MB) which will result after you have captured the clips from the *Capture Gallery*.

TAPE GALLERY

A *Tape Gallery* displays all clips of a tape. So-called poster frames represent the clips. A poster frame is the first frame of a clip used for visual identification purposes.



A *Tape Gallery* is a kind of database which is created when you scan a DV tape. The *Tape Galleries* are saved in the DV Explorer and can be opened by double clicking on a name.

The buttons in the toolbar of the *Tape Gallery* let you open the Clip Info window, display large posterframes, or display thumbnails.

DV DEVICE CONTROLLER

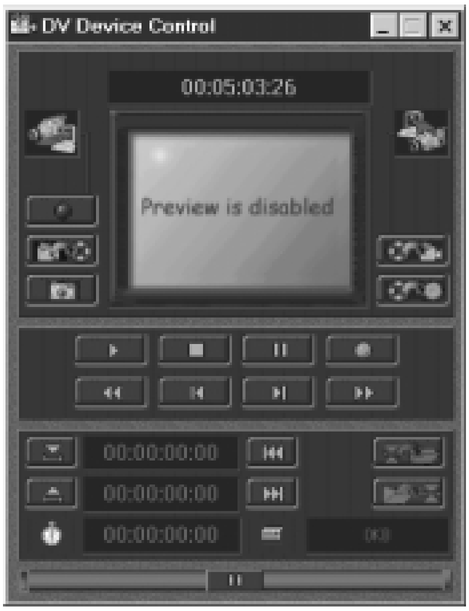
The *DV Device Controller* window allows you to remotely control your DV equipment so that you do not need to use the buttons on the device itself. It also contains a preview window, lets you capture video and print it back to tape and add trim points.

To open the DV Device Controller,

- in the *Capture Gallery*, go to the *Tools* menu and click *DV Device Controller*.

  —or—

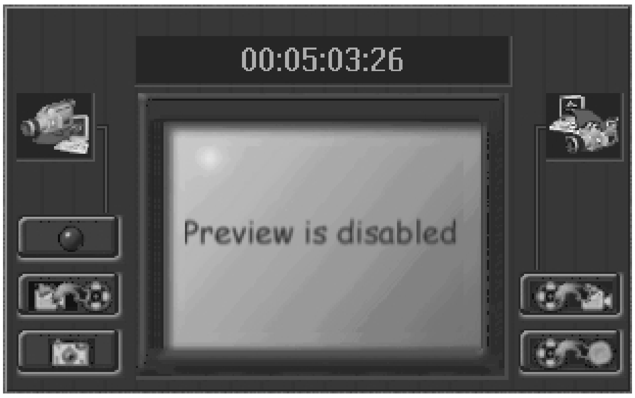
- click on the *Camera* icon in the toolbar.



Top section of the DV Device Controller

The top section of the *DV Device Controller* displays a preview of the current video and the current time code. The preview quality depends on the overlay capabilities of your graphics board.

This window also contains the buttons for capturing a bitmap (*Snapshot*), saving digital video to hard disk (*Capture*), previewing DV AVI files on your DV device and transferring saved files from hard disk to the DV video tape (*Print to tape*).



Time code(top of DV Device Controller):
Displays the time code of the current video clip. The time code marks the chronological position of a video frame and is given in the hours:minutes:seconds:frames format. This time code is transferred by the DV video device to the *DV Device Controller*.

From DV Device to Computer
(Left Side)

Live capture:
The *Live capture* button lets you capture video directly from the lens or from your DV tape. If you want to capture video from the lens of your DV camcorder, make sure that it is set to the *Camera* mode.

If you want to capture video from the tape, make sure that your DV device is set to the *VTR* mode.

After you start capturing, a dialog box appears displaying the progress of the capture process. To abort capturing, press the *Cancel* button. If you do not abort capturing manually, the DVTools will save DV video to your hard disk as long as enough storage capacity is available. After the capturing process is complete, you can enter a drive and the directory where you want to save the AVI file. The default drive is the one you selected in the *Preferences* dialog box.

Capture (creating AVI file):
This button lets you create an AVI file from the current video clip. You can only use this button after you set the in and out points for the clip boundaries (like during tape scan). If you did not scan the tape and you want to capture an AVI file from your tape, use the *Live capture* button (see below). If you do not want to save the entire clip on the hard disk, you may want to set trim points. These trim points mark the beginning and the end of the AVI file.

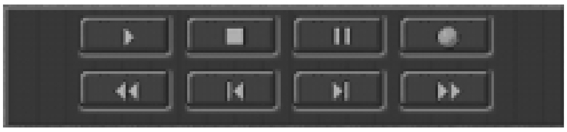
From Computer to DV Device (Right Side)

Preview DV Output:
This button allows you to play back an AVI file to your DV device for previewing.

Print-to-tape (recording AVI files back to the DV videotape):
Allows you to save the AVI file back to your DV videotape.

VTR controls

The VTR controls area lets you remotely control your DV device. The controls resemble the controls found on your DV device.



Playback:
The DV device plays back the tape.

Pause:
The DV device stops playing back the tape, while displaying the current frame.

Stop:
The DV device stops playing back the tape, the current frame will not be displayed.

Set To Record:
Allows you to set the DV device to record. Useful for e.g. PAL cameras that do not have a record button for use in VTR mode.

Rewind/Play fast in reverse:
If the DV device is stopped, this button rewinds it rapidly. If the DV device is in play or pause mode, this will provide fast reverse play with viewable video.

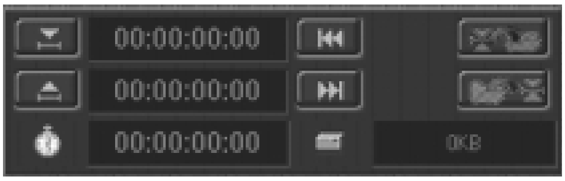
Step back:
This button lets you jump to the previous frame.

Step forward:
This key lets you jump to the next frame.

Fast-forward/Play fast forward:
If the DV device is stopped, this button causes the tape to move forward rapidly. If the DV device is in play or pause mode, this will provide fast forward play with viewable video.

Trim points

If you do not want to capture the entire clip but only a section of it you may want to define trim points (in and out points). It is only possible to add trim points, if you scanned the tape. A clip is in this case the video footage between the start of a shot and the end of a shot.



You cannot define sections extending beyond clip boundaries when you opened the *DV Device Control* from within the *Clip Info* window.

These buttons let you define in and out points to define the start and end of a section. Click on these buttons either during playback or in the pause mode. You may also use the slider at the bottom of the *DV Device Controller* (jog shuttle) to move the tape forward or to rewind it.

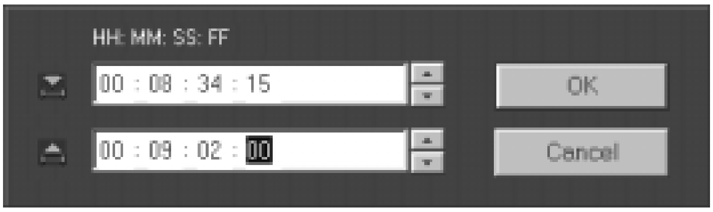
Start of clip:
Rewinds the current video clip to its beginning.

End of clip:
Moves the current video clip forward to its end.

Apply trims:
After you defined a section, click *Apply trims.*

Manual editing of the In and Out time code

The DVTools DV Device Controller allows for the manual (typed) entry of trim point timecode by the user. Simply double click on either the In or Out point time code window to bring up the Manual trim point entry window. Enter in the desired trim In and/or Out point value and then click *OK.*



HH: MM: SS: FF
00 : 08 : 34 : 15
00 : 09 : 02 : 00

The trims will only be permanently saved in the clip using the *Apply trims* button, if the videotape has already been scanned and if a database has been created for it.
If you add trims in a clip you opened from the *Tape Gallery*, these trims will be permanently saved for this clip until you change them.
If you add trims in a clip you opened from the *Capture Gallery*, the trims will only be saved for this special *Capture Gallery* database.

The *Clip length* is the duration of the current section. If no trim points were set, the duration of the whole clip will be displayed.

The *File size* displays the file size (in kilobytes) the current section will have when being captured. If no trim points were set, the size of the whole clip will be displayed.

You may delete the trims you set in the current clip by clicking the *Delete trims* section. This restores the original clip boundaries.

Jog-Shuttle

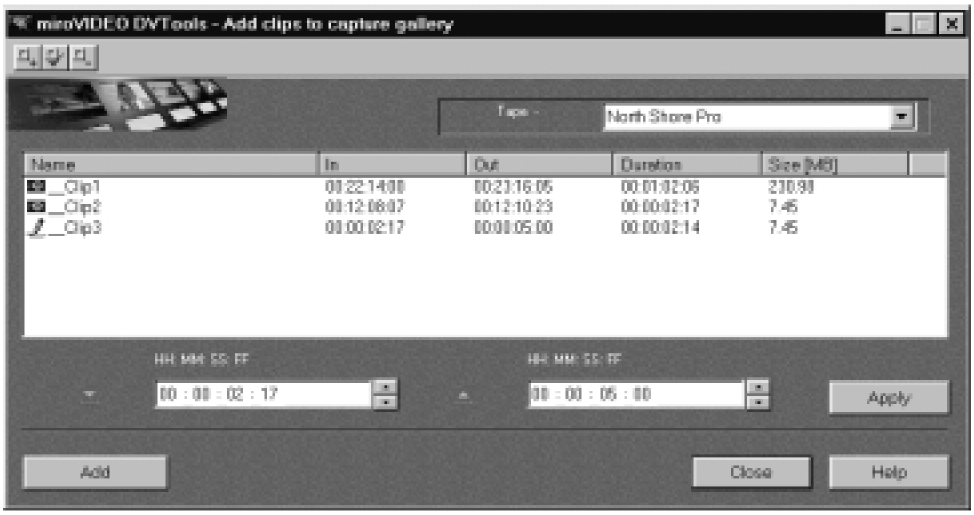
The *Jog/Shuttle* slider is located at the bottom of the *DV Device Controller* window. You can use it to search through a tape at different speeds to accurately locate start and end frames for your clips. The *Jog/Shuttle* slider duplicates the *Jog/Shuttle* editing wheels offered on VCRs. The rewind and fast forward modes of the VTR controls scan in one speed, whereas the *Jog/Shuttle* slider offers a variety of speeds.

When the slider is in the middle, the DV device is paused. Dragging the control box to the left accesses the reverse shuttle speeds, while dragging it to the right accesses the forward shuttle speed.

Not all DV devices support all of the functions possible with the DVTools DV device controller. Please refer to your DV device's owner's manual to learn what functions your DV device supports.

Manually inserting video clips into the Capture Gallery.

The DV Tools identify recorded scenes on a registered DV Video tape by date and time code information. Using the *View* menu and the command *Add clips to capture gallery* the user is able to insert a video clip into the current Capture Gallery.



Tape - North Shore Pro

Name	In	Out	Duration	Size [MB]
__Clip1	00:22:14:00	00:23:16:05	00:01:02:06	230.98
__Clip2	00:12:08:07	00:12:10:23	00:00:02:17	7.45
__Clip3	00:00:02:17	00:00:05:00	00:00:02:14	7.45

HH: MM: SS: FF 00 : 00 : 02 : 17

HH: MM: SS: FF 00 : 00 : 05 : 00

Determine the tape you wish to capture the footage from (*Current tape relies to the tape which is currently in your powered camcorder*). Click on the *New* (⊞) button. Set the in and out point. Click on *Apply*. If necessary, define further video clips. Click on *Add* in order to add the clips to the Capture Gallery. The window *Add clips to capture gallery* supplies the commands *New*, *Rename* and *Delete*. You can access them using the buttons in the upper left corner or by clicking right into the editing area.

Rescanning tapes

If a tape has already been scanned before, the DV Tools will offer to rescan the tape from the beginning or from any known clip. You can add footage to the DV tape without effecting existing clips stored in the database. Select the clip you would like to start from using the corresponding list box.

Chapter 11: Transitions, Filters, and Superimpositions

This chapter explains how the DV500 provides transitions, filters and superimpositions in real-time, without any rendering.

Superimpositions allow you to play one clip over another. In its simplest form, keying takes a foreground image and superimposes it upon a background image. The resulting composite image combines two or more video signals into one.

TRANSITIONS

Under Adobe Premiere Pinnacle Systems offers a vast number of transitions that can be played in real time. You will find these transitions at the top of the Transitions Window. They can be easily recognized by the “P” in the animation.

You can choose the settings for the single transitions by

- double-clicking on the transition in the Transitions Window, or
- double-clicking on the transition after having dragged it into the timeline.
- You can not only check dissolves and effects in preview quality, as before, but rather you can also preview them in real time on the television set/ video monitor, in other words, exactly the way they will also appear later in your movie.

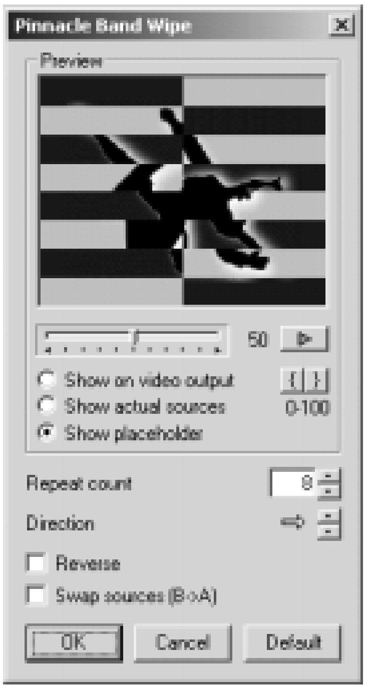
  To do this, open the desired Pinnacle dissolve and activate the option *Show on video output.*

In the following sections, some transitions will be described as examples.

Real time transitions require a lot of processing power during playback. Under some circumstances, it is possible that a particular transition, especially complex gradient wipes, will show dropped frames or distortions. If this occurs, please replace the Pinnacle transition with the same one provided by Adobe Premiere and render it.

Pinnacle Band Wipe

After having opened the transition “Pinnacle Band Wipe”, you can choose additional settings:



○ Show on video output
○ Show actual sources
● Show placeholder

Repeat count 8

Direction ⇨

☐ Reverse
☐ Swap sources (B<>A)

Slider

By using the *Slider* you can scan through the transition from the beginning to the end and go back again.

Play / Stop

If you click the button *Play*, the transition will be played beginning at the current slider position. The button changes into the button *Stop*. If the playback is not stopped, the playback will start again after the end.

In / out points

By using these buttons you can set in and out points. For this purpose move the slider to the point at which you want the transition to start and click on the button *In*. Then move the slider to the point at which you want to stop the transition and click on the button *Out*. Only parts of the transition will be used.

Show on video output

If you acitvate this option you can preview the effect not only in preview quality but in real time on the television set/ video monitor, in other words, exactly the way they will also appear later in your movie.

Show actual sources

Note that this option is only available if you have opened the transition from the timeline.

If you activate the option *Show actual sources*, the pictures of the original sequences in the timeline are used during the playback of the transition.

Show placeholder

If you have activated the option *Show placeholder*, the bitmap of the transition is shown during the playback of the transition.

Repeat Count

Here, you choose the number of elements (for the transition Pinnacle Band Wipe the number of stripes) that the transition is to contain. Depending on the kind of transition you can choose the number of elements not only in one but also in two directions (e. g. for the transition “Pinnacle Checker Board”).

Direction

The buttons *Direction* determine the direction of the transition (for the transition Pinnacle Band Wipe this is either vertical or horizontal).

Reverse

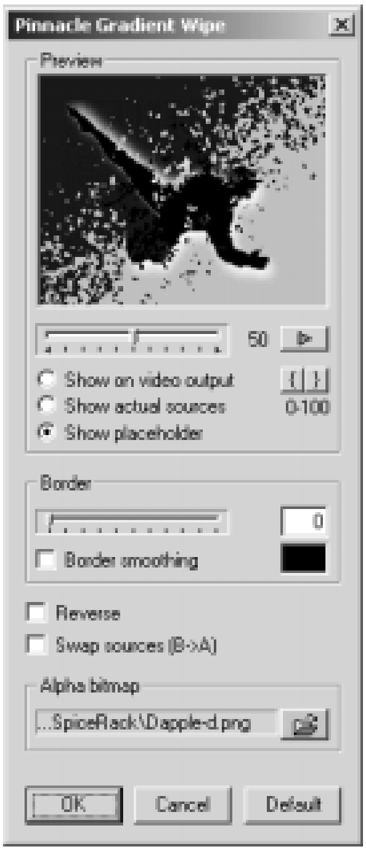
If you activate the checkbox *Reverse*, the transition will run in the opposite direction, i.e. instead of running from the outside to the inside it will now run from the inside to the outside.

Swap sources

By using the checkbox *Swap Source* video A will be swapped with video B.

Pinnacle Gradient Wipe

The transition Pinnacle Gradient Wipe—like other transitions—offers more options than the ones described in the previous section.



50

○ Show on video output
○ Show actual sources
● Show placeholder

0-100

0

☐ Border smoothing

☐ Reverse

☐ Swap sources (B->A)

...SpiceRack\Dapple-d.png

Border

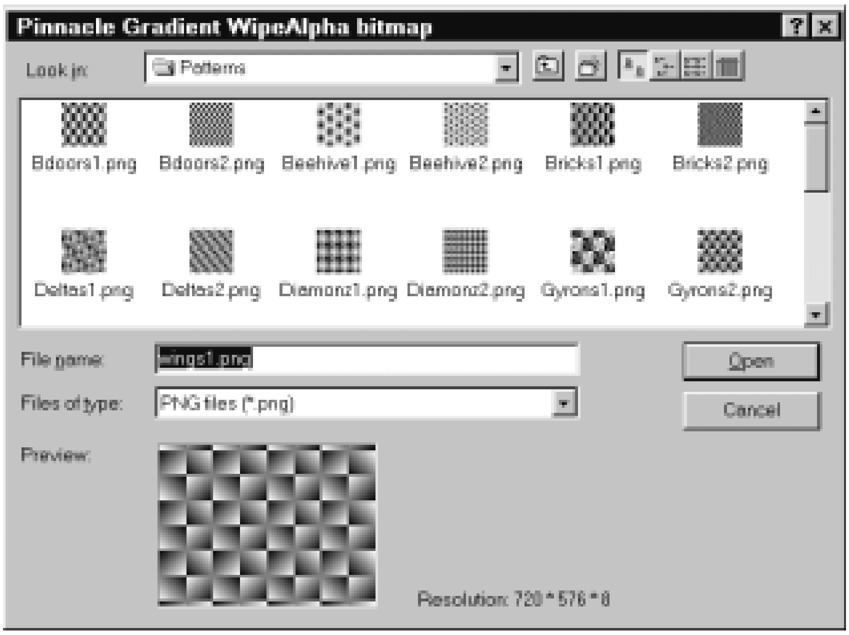
By using the slider you can place borders of any width between both elements of the transition. To determine the color of the borders click into the color box and choose one of the Windows standard colors or mix any color you like by yourself.

By activating the checkbox *Border smoothing* you slightly soften the edges of the border.

Pattern

If you want to change the pattern that is the basis for the transition Pinnacle Gradient Wipe, click on the pattern in the upper area of the dialog box or click on this button 📂.

The following dialog box will appear.



Look in: Patterns

File name: wings1.png

Files of type: PNG files (*.png)

Resolution: 720 * 576 * 8

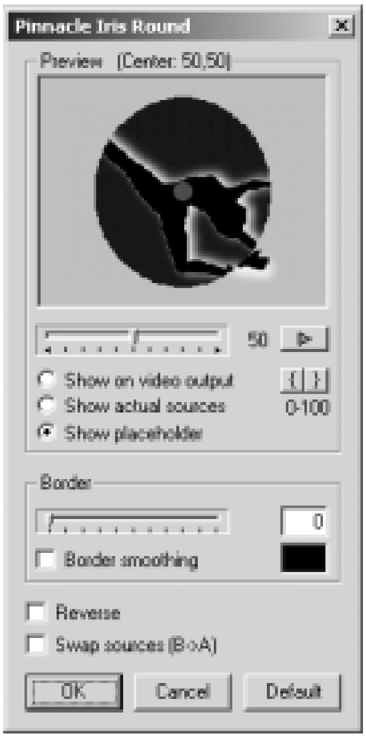
Here, you can choose any pattern you like from the Pixèlan SpiceRack library of gradient wipe images. Please see Chapter “Video SpiceRack” for more information on SpiceRack.

If the transition was playing **before** you clicked the open button, you will see a preview of the transition while you choose it.

You can also create your own gradient wipe transitions by creating or modifying the PNG files. The PNG image format can be imported and exported by many image manipulation applications such as Adobe Photoshop.

Pinnacle Iris Round

The transition Pinnacle Iris Round again provides different settings to customize it.



In addition to the adjustment options already described, you can move the center of the transition by dragging the yellow dot with the mouse. The current position is indicated at the top of the dialog box.

FILTERS

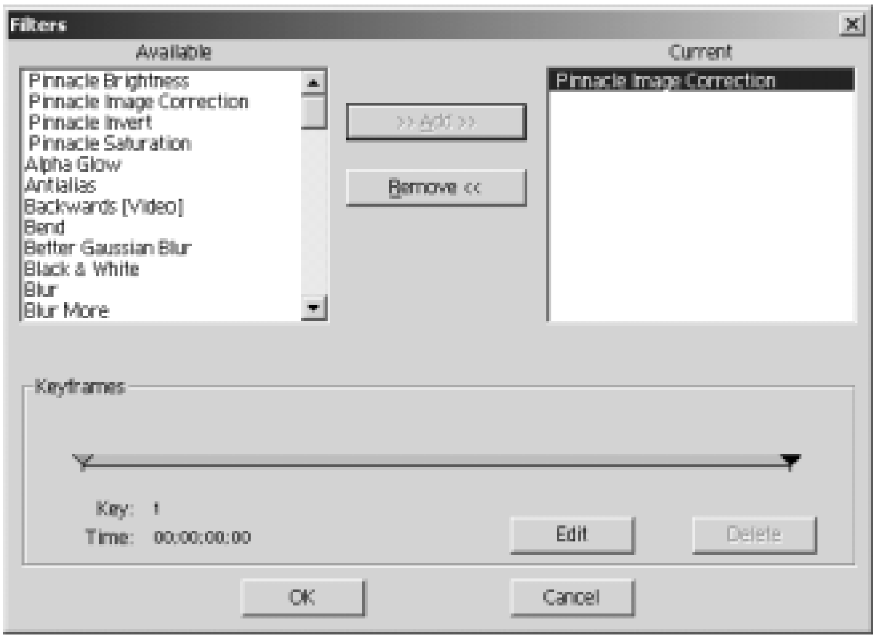
Pinnacle Systems provides four additional filters under Adobe Premiere:

- Pinnacle Image Correction
- Pinnacle Brightness
- Pinnacle Saturation
- Pinnacle Invert.

These filters run in real time as long as there is no other effect at the same position in the timeline.

Pinnacle filters may only have two keyframes and these must be at the very start and the very end of the clip. If you set different values for the start and the end, the value of the filter will be varied smoothly in between.

You can activate these filters by clicking with the right mouse button on any clip in the timeline and choosing the command *Filter*... .



Current: Pinnacle Image Correction

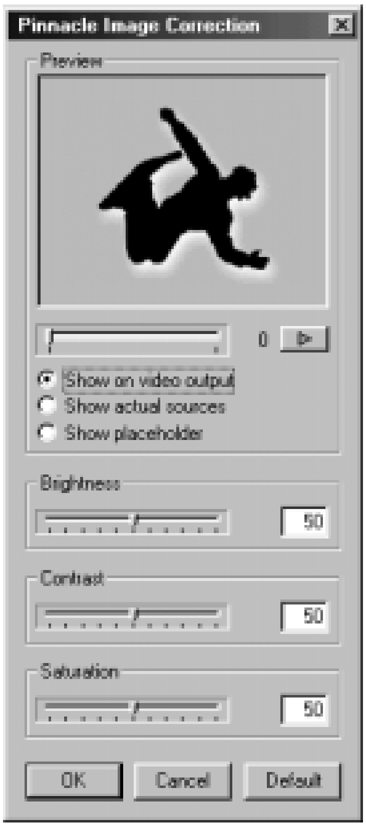
Key: 1
Time: 00:00:00:00

Do not move the start and end keyframes in the filter timeline from their default positions, as will result in unexpected behavior of the filter parameters. If want to apply the filter to only a part of the clip, use the razor tool to cut out that part and apply the filter only here.

In the window *Filters*, please select the desired filter and click on the button *Add*.

Make the desired settings.

Pinnacle Image Correction



0

● Show on video output
○ Show actual sources
○ Show placeholder

Brightness 50

Contrast 50

Saturation 50

Slider

By using the top slider you can see how the filter works on different parts of the clip.

Play / Stop

If you click the button *Play*, the filter will be played beginning at the current slider position. The button changes into the button *Stop*. If the playback is not stopped, the playback will start again after the end.

Show on video output

If you acitvate this option you can preview the filter not only in preview quality but in real time on the television set/ video monitor, in other words, exactly the way they will also appear later in your movie.

Show actual sources

Note that this option is only available if you have opened the transition from the timeline.

If you activate the Option *Show actual sources*, the pictures of the original sequences in the timeline are used during the playback of the filter.

Show placeholder

If you have activated the option *Show placeholder*, the bitmap of the filter is shown during the playback of the transition.

Brightness

By using the *Brightness* slider you can select the brightness value that the filter applies.

Contrast

With the *Contrast* slider you can adjust the degree of the contrast.

Saturation

With the lower slider you can adjust the degree of the saturation.

Pinnacle Brightness

Slider

By using the lower slider you can select the brightness value that the filter applies.

Pinnacle Saturation

Slider

With the lower slider you can adjust the degree of the saturation.

Pinnacle Inverse

By using this filter you can invert the colors of your video clip: black turns to white, red turns to blue, etc.

SUPERIMPOSITIONS

For real-time operation, the following media can be used in the superimposition track.

- Still titles in TrueColor with alpha channel, a white alpha matte or a black alpha matte. These titles may be created with the Premiere titling function or with TitleDeko. For details on TitleDeko, see the Chapter “TitleDeko” in this User’s Guide
- Bitmaps with an alpha channel or black or white alpha matte.
- Video clips captured with DV500.

Note that a combination of a title/bitmap and a transition or filter at the same point in the timeline will require rendering. This is indicated by a red line below the work area bar. Setting the work area appropriately and pressing <Enter> will start the rendering process.
In addition, some bitmaps or titles that are very complex may also not be processed in real time. Again, a red line will indicate this.

Chapter 12:
Pinnacle FreeFX

This chapter explains how the DV500 board works with video effects. The DV500 board allows you to use all normal effects from Adobe Premiere.

In addition, Pinnacle FreeFX, these are accelerated 3D effects, are delivered with the DV500.

Important: The accelerated 3D effects of the Pinnacle FreeFx are available only in Windows 98 / 98 SE / ME, and Windows 2000!

What Is “Pinnacle FreeFX”?

Pinnacle FreeFX is an effects plug-in for Adobe Premiere. It offers additional 3D effects.

The FreeFX effects are no real-time effects and therefore have to be rendered.

FreeFX has a powerful 3D rendering engine offered in a complete and easy-to-use interface. An installed graphics board with 3D acceleration is used by FreeFX to strongly accelerate the rendering process.

System requirements for FreeFX

DirectX For the perfect function of FreeFX Microsoft DirectX 7.0 or higher has to be installed on your system. DirectX is installed automatically during the installation of the DV500. If you have not executed this installation step at the beginning, please do this now.

Start FreeFX

Before starting Premiere, you should make sure that your VGA screen runs at 16 bit (32,768 or 65,536) colors.

Many 3D accelerated graphics boards do not support proper FreeFX rendering while running the Windows display in TrueColor mode.

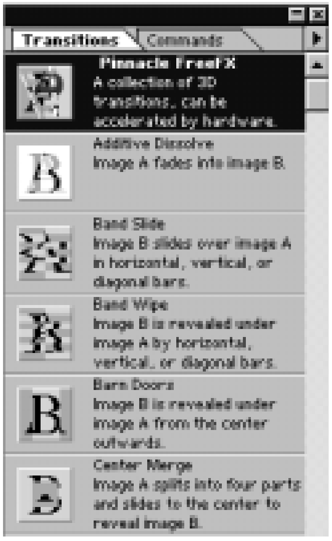
Start Premiere after the Pinnacle FreeFX installation. Open the transition palette. The Pinnacle 3D transition should now be visible in the top area of the screen window.

Compatibility problems can occur with the graphics card installed when accelerating the hardware. Therefore, the hardware acceleration should be switched off as a rule (dialog box *Pinnacle FreeFX (Rendering in Hardware), Hardware* button), i.e., the slider is set to the lowest position.

Set the slider to the proper position depending on the graphics board used in your PC.

Important: If you are not sure if your graphics board and drivers support full FreeFX acceleration, you should start working with FreeFX using the lowest slider position.
For more information on the current compatible graphics boards, please visit our FreeFX web site **`http://www.pinnaclesys.com/freefx`**.

Working with FreeFX



Pinnacle FreeFX
A collection of 3D transitions, can be accelerated by hardware.

Additive Dissolve
Image A fades into image B.

Band Slide
Image B slides over image A in horizontal, vertical, or diagonal bars.

Band Wipe
Image B is revealed under image A by horizontal, vertical, or diagonal bars.

Barn Doors
Image B is revealed under image A from the center outwards.

Center Merge
Image A splits into four parts and slides to the center to reveal image B.

FreeFX works like using any other Premiere transition with custom settings:

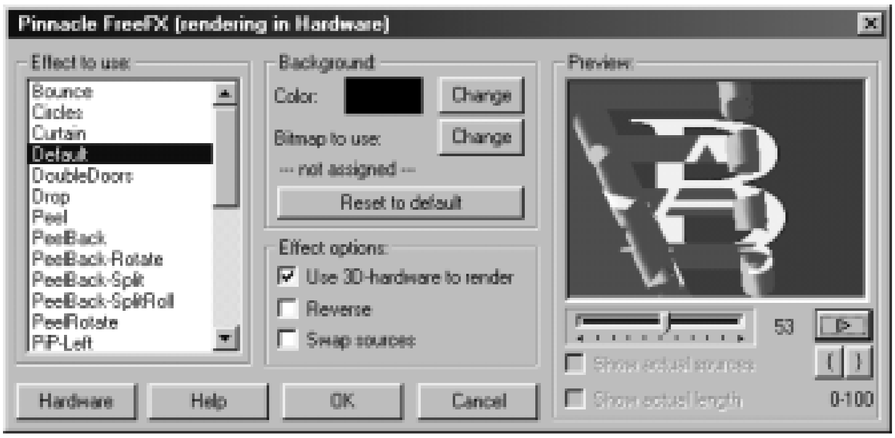
In your Premiere project, drag the Pinnacle FreeFX transition from the list in the transition palette to an appropriate position of the timeline window.

In the *Pinnacle FreeFX* window select one of the available effects, then click *OK*.

That’s it!

Now you can preview, render and play the FreeFX the standard Premiere way, and put the results to videotape with Instant Video.

The options in the FreeFX window



Bitmap to use: --- not assigned ---

☑ Use 3D-hardware to render

☐ Reverse

☐ Swap sources

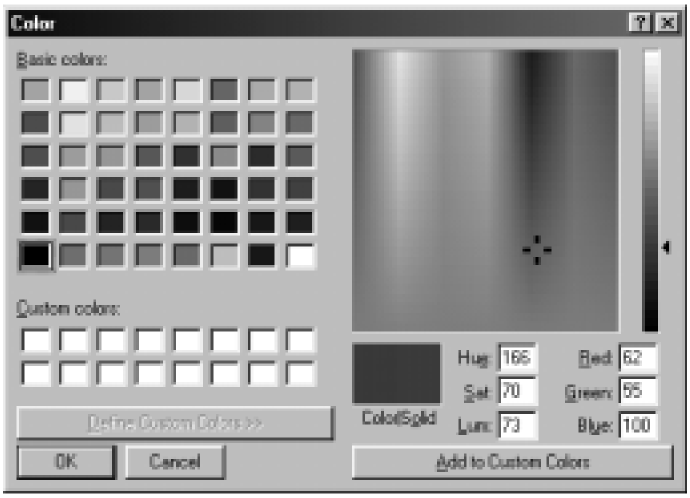
53

0-100

Effect to use Here you select the 3D effect you want to use for this transition by clicking it from the list.

Background: Color” Some Pinnacle FreeFX reveal a (normally) black background on parts of the screen which show neither video A nor B.

Here you can change the color of this background by clicking the *Change* button and picking a color .



Hue: 166 Sat: 70 Lum: 73

Red: 62 Green: 55 Blue: 100

If you select a background bitmap as well, this color affects the tone of the bitmap. The background can be reset to show the standard black by clicking *Reset to default*.

Background: Bitmap to use Some FreeFX reveal a (normally) black background on parts of the screen which show neither video A nor B.

Here you can select a bitmap to be shown as background by clicking the *Change* button.

If you want to change the color of the bitmap, you may add a specific color (see above) to it.

The bitmap must be in 256 colors or more, use true color for best results.

The bitmap will be scaled to the video size - to get best quality, the bitmap size should be identical to your projects video resolution.

The background can be reset to show the standard black by clicking *Reset to default*.

Important: With hardware acceleration enabled, background bitmaps can use large amounts of the VGA board’s offscreen memory. If there is not enough memory available on the VGA board, wrong render results or other problems may occur. In this case you should use smaller bitmaps or no bitmaps at all.

Use 3D hardware to render

This option is normally checked for every Pinnacle 3D transition you apply.

This means that hardware accelerated rendering will be used for this effect if the following conditions are met:

- a 3D accelerated graphics board is detected in your PC and
- there is enough off screen memory detected on the 3D graphics board and
- hardware acceleration is generally enabled in the Pinnacle FreeFX *3D system settings dialog*.

You should uncheck this option if the Pinnacle 3D effect that you have selected causes problems with hardware rendering turned on. This could mean bad looking results or other problems, like system crashes.

This switch only applies to one individual Pinnacle FreeFX transition on the timeline, so you can turn off hardware rendering for one effect while leaving it on for the others. To generally turn on and off hardware acceleration, use the *3D system settings* dialog.

Reverse

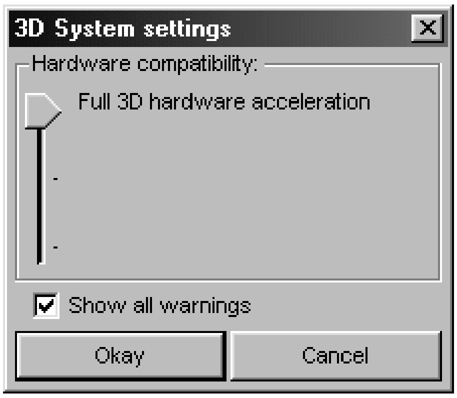
This option is identical to the *Reverse* function in the standard Premiere transition dialog, it makes the transition run from end to start.

Swap Sources

This option is identical to the *Swap Sources* function in the standard Premiere transition dialog, it makes the transition run video B to A instead of A to B and vice versa.

Hardware

This button opens the *3D system settings* dialog. Here you can change the general 3D hardware acceleration mode of Pinnacle FreeFX. Changes done here apply to all Pinnacle FreeFX.



☑ Show all warnings

The hardware compatibility slider offers three settings:

The topmost, called *Full 3D hardware acceleration*, makes the Pinnacle 3D engine render the effects as fast as possible making full use of the available 3D graphics hardware. This may cause compatibility problems with some VGA cards and drivers. With a modern 3D accelerator this results in render times of less than 10:1, meaning a one second transition is being rendered in less than ten seconds.

The center setting, called *Reduced acceleration*, still uses the 3D graphics hardware for acceleration but does handle the image data transfer in a slower mode and prevents using some sophisticated texture blending modes. This can fix problems with some VGA cards.

The lowest setting, called *No 3D hardware acceleration*, does all 3D rendering completely in software, using the CPU. This is slowest, but it works with any VGA card and gives the lowest amount of possible compatibility problems. This setting is required if your VGA card does not support 3D acceleration, or has 8 MB or less of memory.

Click *OK* to close this dialog after doing your settings.

Help Clicking the *Help* button shows the ReadMe file. After reading the info you need, click the button below to get back to the Pinnacle FreeFX window.

Ok This button closes the Pinnacle FreeFX windows, applying all settings and changes you have done.

Cancel This button closes the Pinnacle FreeFX windows without applying the changes you did.

Play This button starts and stops the effect preview playback. This can also be done by hitting the space bar.

Slider The slider shows the current position within the effect. This is given as a percentage. You can change the position by dragging the slider. The same can be done with the left and right cursor keys.

Brackets

The left and right brackets can be used to set the in and out points of the effect. The current percentages are shown below. Setting both to the same value will make the effect static, which is useful for picture-in-picture type effects.

Show actual sources

By default, the two video sources for the transition are represented in the preview window by 'A' and 'B' bitmaps. Selecting this option will show the actual source videos.

Show actual length

By default, the preview of a transition in this dialog has a fixed duration of some seconds. Selecting this option makes the preview run at the same duration the transition currently has in the timeline.

Render mode indicator

At the top of the FreeFX window, an indicator shows if the FreeFX rendering is currently hardware accelerated (rendering in Hardware) or not (rendering in Software).

How to use the Picture-in-Picture Effect

Static picture-in-picture effect (PiP)

To create a static picture-in-picture (PiP) effect:

1. First place two video clips into the timeline, one each on video tracks 1A and 1B, starting at the same time.
2. Next apply the Pinnacle FreeFX on the transition track between the two videos.
3. In the FreeFX settings window, select the PiP effect and move the time slider to 50%.
4. Click on both bracket icons to set both the start and end to 50%. Click *OK*.
5. Adjust the position and length of the PiP effect by dragging it in the timeline. Done!

Dynamic end movement

To add a dynamic end movement to the PiP effect:

1. Add another FreeFX PiP effect, at the end of the one created above.
2. Set it's in point (using slider and left bracket) to 50% and the out point to 100%.

You can add start movements as well using the same method, and get additional effects using the *Reverse* option.

How fast is FreeFX?

This depends on the Pinnacle editing board you use, on the speed of your PC, CPU, and hard drive, on the FreeFX render mode you use, and (if you use hardware rendering) on your VGA card and it's drivers.

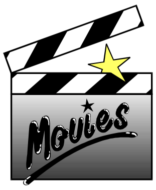
Using a modern 500Mhz PC, a modern VGA board with proper drivers, and a DC50 video editing board we have measured render times of about 12 seconds per second of FreeFX transition, being about 12:1.

If you see slow rendering, you should first check if hardware rendering is being activated. This is shown on top of the FreeFX settings dialog. If it is not active, check the following:

- the hardware slider must be set to medium or high position
- hardware rendering must not be disabled by the checkmark in the dialog
- your VGA must support 3D rendering, must have a Direct3D 6 compatible driver, and at least 16 MB of RAM.

If you have problems...

If you encounter any problems with FreeFX, please refer to Chapter “Troubleshooting” of this manual first.
If you do not find any solution there, please use the FreeFX form available on our web site for reporting—the link to this form is available at **`http://www.pinnaclesys.com/freefx`**.



Chapter 13: Instant Video

WHAT IS Instant Video?

Instant Video is a playback plugin for Adobe Premiere. If you select one of the DV500 presets for your current project Instant Video will be used automatically. Instant Video integrates itself into the Adobe Premiere interface. The plugin handles the video clips and effects in the timeline and controls playback and scrubbing directly from the timeline.

Playback

Playback from the timeline will not only appear in the Premiere monitor window, but also on the video device—according to the selected output. Highly optimized file caching ensures that no frames are dropped even near to the limit of your hard disk.

Effects in real time

The following effects can be played back (and recorded to tape, if you wish) without rendering, as long as you do not combine them:

- Pinnacle wipes
- Pinnacle filters (Brightness, Saturation, Invert, Color correction)
- Static titles and still bitmaps with selectable opacity
- Video on the superimposition track with selectable opacity.

Combinations of these effects and all additional effects that Premiere offers will automatically get rendered into individual files once you set the work area appropriately and press <Enter>. Instant Video plays back these temporary files seamlessly and thus avoids a time- and disk space-consuming rendering process of the entire project.

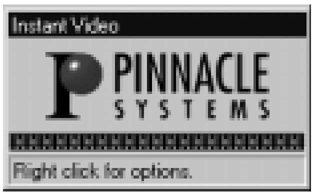
INSTANT VIDEO WINDOW

The Instant Video window may be reduced to just the title bar by right-clicking it and selecting Minimize.

If the Instant Video window is not visible, make sure that you loaded one of the DV500 presets in the Premiere *New Project Settings* dialog. The *Editing Mode* must always be set to Pinnacle Systems for Instant Video to be active.

Film strip

Film strip green Below the Pinnacle Systems logo there is a horizontal film strip. This acts as an indicator for the playback status. If all images in the strip are green, then the whole project can be played back in real time by Instant Video.



Film strip red If the strip frames are red, then some parts of the project can not currently be played back in real time by Instant Video. If you scrub or play, these parts will not be shown on the video output of your DV500 board and the video in upper track is marked by a red cross.

To render the parts that cannot be played back in real time, set the work area appropriately and hit the <Enter> key. After the operation completes and you click into the timeline, the film strip will turn green again.

Press the space bar or the Play button in the monitor window to play back the timeline from the cursor position. This has the advantage of not starting an unwanted and unnecessary audio rendering process.

Status line

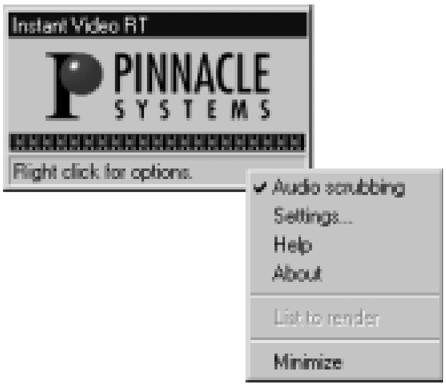
A status line at the bottom of the window shows different information depending on what mode of operation Instant Video is currently in. The status line is not visible if the window has been minimized (see Instant Video menu).

Dropped frames Indicator

This indicator helps you to find out if any frames have been dropped during the playback. This may happen if your hard disk is too slow for the necessary data rate.

Instant Video menu

By moving the mouse pointer to any part of the Instant Video window and clicking the right mouse button, you can activate the Instant Video menu.



Right click for options.

There are six menu items:

- Audio Scrubbing
- Settings
- Help
- About
- Render list
- Minimize / Restore

Audio scrubbing

By default, *audio scrubbing* is switched on. This means, if your project contains audio, you will hear the audio playback when playing clips or the whole project as well as when scrubbing within the project.

This is the standard Adobe Premiere behavior, but it results in a slight performance loss when scrubbing sections of audio that have not previously been rendered.

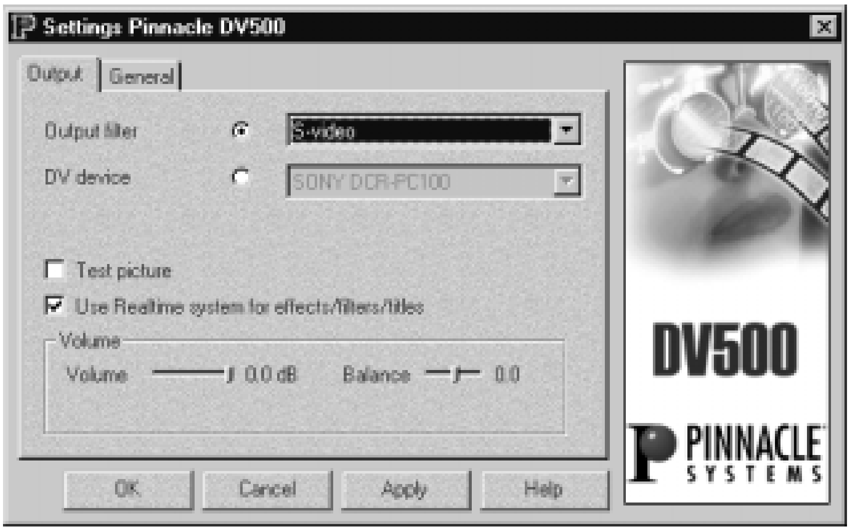
If you switch off *Audio scrubbing* in the Instant Video menu by selecting the Audio scrubbing menu item, there will be a different behavior: You will hear audio only when playing clips or the project, but not when scrubbing – and the scrubbing performance and frame rate will be higher.

Settings

The *Settings* command opens the Control. The appearance of the *Output* tab varies according to the connected video device: analog (S-video / Composite video) oder digital (DV device).

For detailed information, please click the *Help* button or refer to the “Pinnacle Control” chapter in this User's Guide.

***Output* tab (analog device)**



Output filter ● S-video

DV device ○ SONY DCR-PC100

☐ Test picture

☑ Use Realtime system for effects/filters/titles

Volume 0.0 dB Balance 0.0

Output filter

Here, you select if the output filter is optimized for the S-Video or the Composite video output. Set this option according to the output you connected your recorder to. Note that all outputs will always show the video signal, but the one selected here will provide the best-quality signal.

When outputting to a DV device, this option will not influence the filtering.

Test picture

If the checkbox *Test picture* is activated the internal test picture of the encoder will appear on the S-Video and composite video outputs and indicate the correct function of DV500.

The test picture will never appear on the DV output.

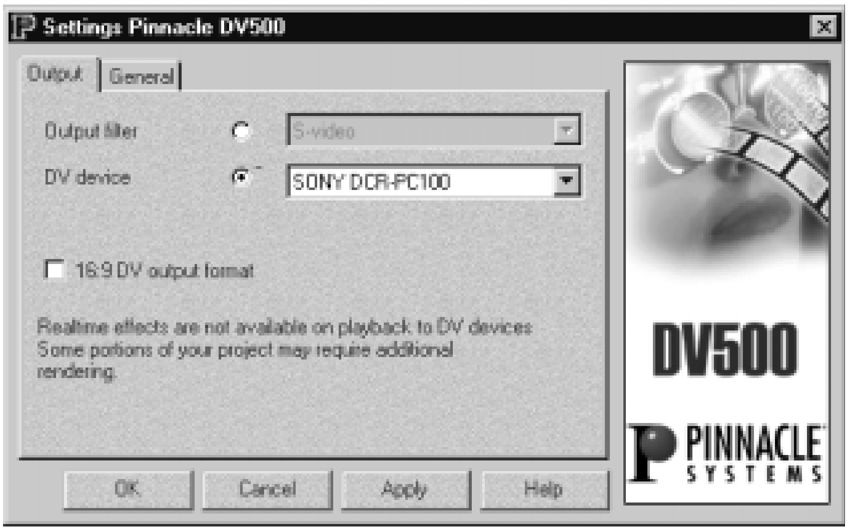
Checkbox Real-time

If you deactivate the real-time option, the real-time effects have to be rendered. You should only deactivate the real-time effects if you realize that the project playback cannot be done jerkyless.

Volume

Volume / Balance
Moving the sliders *Volume* and *Balance* you can select the audio output and balance level. Both sliders can be moved independently of each other. The set level will be displayed.

***Output* tab (DV device)**



Output filter ○ S-video

DV device ● SONY DCR-PC100

☐ 16:9 DV output format

Realtime effects are not available on playback to DV devices. Some portions of your project may require additional rendering.

16:9 DV Output format

If you activate the*16:9 DV output format* checkbox, the video is out put in the 16:9 DV format (”wide-screen format”).

***General* tab**

This tab allows you to determine the settings of the video display on your PC monitor during playback.

Mode

Here, you can determine the mode during playback.

Overlay Surface
You should generally—if your graphics board is supporting this—activate the *Overlay surface*.

Primary Surface
If your graphics board does not support the *Overlay surface*, chose this option.

Off
There is no overlay during playback. No video will be displayed in the playback window.

Pinnacle logo (can only be chosen if *Overlay surface* is selected)

If you activate the *Pinnacle logo* checkbox, the Pinnacle logo will be displayed during playback. It will also indicate the active video monitor.

Help

You can access the Instant Video online help by selecting the menu item Help from the Instant Video menu. Please do this if you have any questions or problems using Instant Video.

About

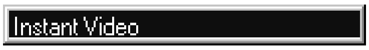
The *About* command gives you some brief information about Instant Video.

Render list

Here the segments are displayed which have to be rendered. An additional message is shown if it is possible to avoid the process of rendering.

Minimize/Restore

The last item in the menu is used to change the size of the Instant Video window. If the window is at normal size, the menu item is named Minimize, and will reduce the window size so that only the window title bar remains visible.



If the window is at minimized size the menu item is named Restore, and will bring back the window to normal size. You may keep the Instant Video window minimized during editing to have the maximum space available for other windows, and restore it to normal size for printing your production to tape in order to see the dropped frames information.

MODES OF OPERATION

Video output

In Adobe Premiere there are many modes of video display. You can play, scrub or preview, use the trim or slip/slide tools, the monitor window can be in single view or dual view mode with attached or detached controls, and many more. The Adobe Premiere documentation describes all of these modes on the PC screen – without using Instant Video.

When using Instant Video, there is the additional video output to your TV, monitor or video recorder. This is active most of the time, but not always. In addition, the PC screen display is different from the standard Adobe Premiere behavior in some cases.

- When playing or scrubbing using the source monitor, single clips are shown on the PC screen and on the video outputs simultaneously. You can use this mode to print single clips to tape.
- When using the trim mode or the slip and slide tools, the video is shown on the PC screen only.
- When playing the timeline by pressing the space bar or clicking on the Play button of the Target Monitor, all real time effects and effects that were rendered previously will be shown both in the monitor window and on the video outputs. Portions that have not yet been rendered will not be shown.
- When outputting the timeline (<Enter> key) or playing the timeline after you called the 'Render Selection' function, the timeline content will play both on the PC screen and on the video output. Note that the work area must be set across all parts of the project that need rendering before the rendering process is started.
- When you scrub or play parts of the timeline, the output depends on the timeline content: If you scrub through parts / effects that have not been rendered by Adobe Premiere et, there will be no video output and the clip in the upper track will display a red cross.
  All parts of the timeline that do not need rendering or have already been rendered will be played on the PC screen and on TV out.

Audio output

The audio parts of the clips and projects you play back with Instant Video are output using the DV500 editing board.

RENDERING PREVIEWS

Instant Video behavior depends on whether the audio and the video effects have already been rendered or not. Here is a summary about how you can do this rendering. The following always applies to the currently selected work area in the timeline window, and only renders things that have not already been rendered:

- To render audio and the necessary parts of the video, and immediately start the playback of the work area (can be stopped by hitting the <ESC> key), select Project / Preview or hit the <Enter> key. Make sure that the work area has been set appropriately before you do this.
- To render audio and the necessary parts of the video, select *Project / Render Selection*.
- To render audio only, select *Project / Render Audio*. Rendering of audio is not required - it can be processed by DV500 in real time and at full quality, as long as not too many audio filters are applied.

All this is called “Preview” in Adobe Premiere terms, but it actually is full quality output with Instant Video.

LIMITATIONS

Video clips that have any speed other than the standard 100% (including reverse play) cannot be played directly by Instant Video. To make these clips play, they must first be rendered to the new speed. For this, select the clip, open the *Clip* menu and select *Video / Field Options*. Set the correct options for the clip’s desired speed. Now set the work area to the area of the project you want to play, and press <Enter>.

Clips that are not compressed with the compression format supported by your DV500 board, cannot be played to the video outputs directly; they must be rendered and transcoded to the DV500 compression format first.

To transcode all parts of the work area into the correct format use the preview function (<Enter> key). Before transcoding, the incompatible clips will not be shown on the video output and are indicated by a red line below the work area bar in the timeline.

All video clips in a project must have the same video resolution, and the same frame rate in order to be played by Instant Video without previous rendering. Not necessary if you selected “Pinnacle AVI DV”, “Pinnacle DVD”, or “Pinnacle MPEG2-CD” as *Editing mode*.

Chapter 14: TitleDeko

WELCOME TO TITLEDEKO

Introduction

TitleDeko is a plug-in program for Adobe Premiere or higher. TitleDeko is a plug-in program for Adobe Premiere or higher. This plug-in is designed to work with your board. As an integrated title editor program, TitleDeko allows you to create professional quality titles and graphics quickly and easily. Titles can contain words, shapes, background colors, and photos or graphics imported from other programs. TitleDeko offers professionally developed Preset Styles for quickly making titles, along with virtually endless custom styling. You can modify titles for a variety of effects, such as titles that roll in vertically or crawl horizontally. You can also adjust the duration the title appears in your movie.

This chapter begins with a brief explanation of how titles are created, details the more advanced features, and then guides you through several examples of making and modifying titles.

How Titles Are Created

TitleDeko appears in a separate window with its own user interface. It creates titles that are inserted in your Adobe Premiere project. You can also save titles separately to use in other Adobe Premiere movies.

You create the title in the Preview Area of the TitleDeko window. You type in text, apply a style, and complete it by resizing, repositioning, or rotating the text, and by adding shapes or pictures. When you’re done, save the title and press <F12>. The title is automatically inserted into the Adobe Premiere Project window. Titles and graphics are trimmed in Adobe Premiere. See the Adobe Premiere User Guide for complete instructions on trimming.

LAUNCHING TITLEDEKO

You can launch TitleDeko from the Main Menu Bar of Adobe Premiere, or in two ways from an existing Adobe Premiere project.

You can also start TitleDeko directly from Windows.

Launching from the Adobe Premiere Main Menu Bar

Choose *Project* > *Create,* then click *TitleDeko*.

Launching from the Adobe Premiere Timeline

On the Timeline, double-click the title icon of an existing TitleDeko title.

You can only launch TitleDeko in this manner when there is a TitleDeko title on the Timeline.

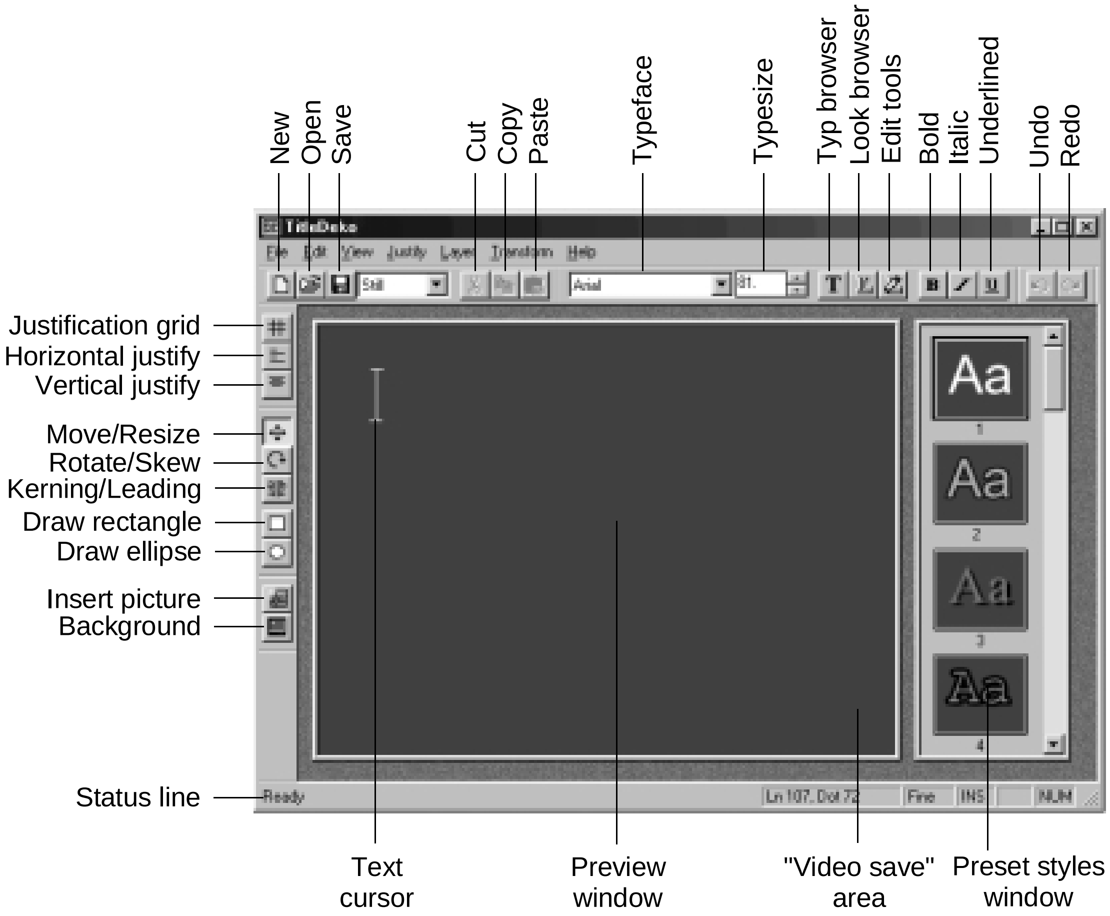
Launching from the Adobe Premiere Project Window

In the Project window, double-click the title icon of an existing TitleDeko title.

You can only launch TitleDeko in this manner when there is a TitleDeko in the Project window.

THE TITLEDEKO USER INTERFACE

TitleDeko is a separate application with its own user interface that offers menus, windows and toolbars.



TitleDeko Windows

TitleDeko windows follow standard Windows conventions—you can open, close, move and resize them.

Menu Bar
The Menu Bar provides menus of commands and other choices (not shown in illustration). Frequently used commands have Toolbar buttons.

Toolbars
Toolbars contain Tool Groups that can be ”torn off” or rearranged.

Preview Area
A Preview Area shows a what-you-see-is-what-you-get (WYSIWYG) view of your work, along with lines denoting a ”video safe area” always visible in the final movie.

Preset Styles
A Preset Styles window shows the style presets that can be applied to text and other objects. You can modify the Preset Styles and create new ones.

Status Line
A Status Line provides information about the tool in use, text cursor coordinates, movement setting (Coarse or Fine), and so forth.

Tool Functions

At the top and left of TitleDeko are Toolbars that offer fast access to frequently used TitleDeko functions. In addition, all functions can be selected via the menus. Frequently used functions also have keyboard shortcuts.

New, Open and Save Files

These are standard Windows functions.

File Type

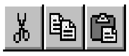
Still, Roll, Crawl

Select a File Type for the title. Choices include *Still, Roll, and Crawl.* Choosing *Still* creates a title that appears on the screen, remains for a set duration, and disappears. Choosing *Roll* creates a title that rises onto the screen, moving from the bottom edge to the top. Choosing *Crawl* creates a title that moves onto the screen from the right and progresses to the left.

Still

Rolls and Crawls are rendered in Adobe Premiere.

Cut, Copy and Paste

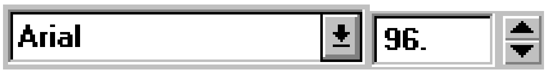


These are standard Windows functions.

Typographical Characteristics

Fonts

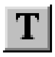
Before you can change typographical characteristics, select the text you want to change. Click the drop-down list arrows to choose a typeface and its size.



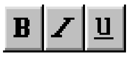
Arial

96.

To preview the typeface before you select it, click the *Typeface Browser button*, then choose the face you want from the browser window.



To make text bold, italic and/or underline, click the respective button.



Look Browser / Edit Looks

Look Browser

Click the *Look Browser button* to display a window that contains all the preset looks. Clicking on a specific look applies a set of appearance attributes to the selected object.

Edit Look

Click the Edit Look button to modify the currently selected look. There are numerous fine adjustments that are explained in greater detail later.

Grid / Horizontal / Vertical Alignment Browsers

Alignment browser tools are active depending on whether the selected object is text or a non-text object (such a circle). For example, you can right align a circle, but you can't kern it like text by spreading out the words and letters.

Grid

Click the *Grid button* for a browser that gives you a fast way to align objects.

Horizontal and Vertical

To change the horizontal or vertical alignment and/or justification of text characters, click the respective button and choose the type of alignment you wish. Note that some alignments also work on objects.

Undo / Redo

Click *Undo* to undo the last action. Undo will undo multiple levels of action, limited only by available memory. *Redo* undoes the last *Undo*.

Move/Resize, Rotate/Skew

Depending on the object handle selected, these controls have different functions. Move the cursor over the object. The cursor shows the active function.

Text Kerning/Leading

Kern Text Spreads text lines vertically (leading), or adds/removes space between individual letters and words horizontally (kerning).

Add Rectangle, Ellipse

Click to add these shapes.

□ ○

Insert Picture

Click to insert an image from your hard disk or other media. Pictures are treated like other objects in that you can move, scale and size them. You cannot, however, skew or rotate a picture.

Replace Background

Allows you to make adjustments to the color, opacity and other details of the background.

Additional Menu Commands

Coarse / Fine

Cursor Movement
From the main menu bar, select *Transform > Coarse* or *Fine* to change the increments used in cursor movement.

Bring to Front / Send to Back

Layering
From the main menu bar, select *Layer > Bring to Front* or *Send to Back* to place the selection on the top or bottom layer.

Bring Forward One Layer / Send Back One Layer

From the main menu bar, select *Layer > Bring Forward One Layer* or *Send Back One Layer* to move the selection one layer toward the top or bottom.

Find, Find Next and Replace

Search and Replace
From the main menu bar, select *Edit > Find*, *Find Next* or *Replace* to perform text search and replace functions analogous to those of a word processor.

Accept title, return to Adobe Premiere/ Reject title, return to Adobe Premiere

Accept/Save Title
From the main menu bar, select *File > Accept title, return to Adobe Premiere*. Accepts the title and returns you to Adobe Premiere. If you have not yet saved the title, this command will first allow you to save, then return to Adobe Premiere.

Return to Adobe Premiere
From the main menu bar, select *Reject title, return to Adobe Premiere*. Rejects the title and returns you to Adobe Premiere. Use this command when you do not want to save changes to the title.

Clear Selected Text and Select All

Selection
From the main menu bar, select *Edit > Clear Selected Text* or *Select All*. These functions are analogous to those of a word processor.

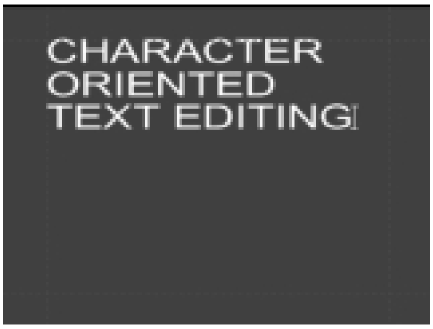
SELECTING TEXT AND OBJECTS

TitleDeko is character-oriented. Consequently, text selection feels a little different than in other software, particularly word processors. The unique ways TitleDeko selects text are expressly tuned for editing titles, and offer a great deal of graphical flexibility, unlike a word processor. For example, you can select a single character and resize it, skew it or even rotate it.

To select all text characters or objects:

Type several lines of text, then try the following selection methods until text selection seems comfortable

- To select all text and objects, choose *Select All* from the *Edit menu*. To select all text, click anywhere on the text field then press <Ctrl> + <A>. A selection box with handles appears around the text.

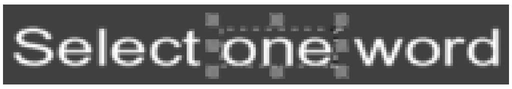


CHARACTER
ORIENTED
TEXT EDITING

If you click on the red dashed line indicating the video-safe area, a similar looking box appears. However, this box is larger and surrounds the entire image. You have selected the image area, not the text.

To select a single word or object:

- Double-click the word or object. Or, use the arrow keys to move the cursor to the beginning or end of the word, then hold <Shift> and press the right or left arrow.

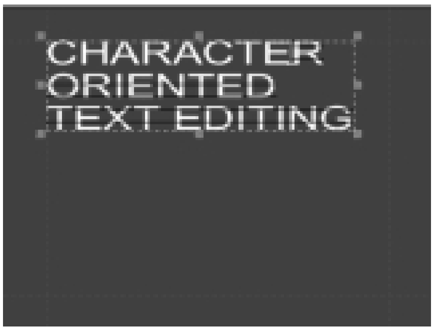


Select one word

- A selection border with handles appears around the word or object.

To select a random section of text spanning more than one line:

- Drag across, then down or up the text, or diagonally.
- Or, position the cursor at the beginning or end of the desired selection area, and press arrow keys while holding the <Shift> key. Also, the <Tab> key moves the cursor from one word to the next.



CHARACTER
ORIENTED
TEXT EDITING

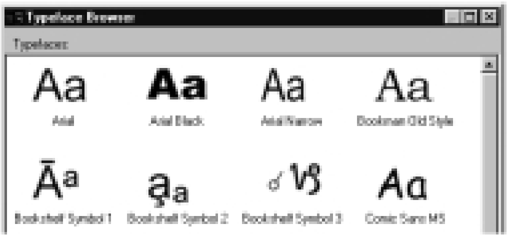
Selected text within blocks is denoted by a series of fine parallel black lines as shown in the following illustration. A selection box with handles surrounds the entire box.

Deselection
To deselect text or objects, click anywhere outside the selected area.

FORMATTING TEXT AND OBJECTS

You can format text and objects by choosing a style with preset attributes, or manually by adjusting attributes such as boldness, size, typeface and spacing.

Fonts To select and change the typeface, click the down arrow and choose the typeface from the drop-down list, or click the *Typeface Browser button* for a graphical display of typefaces, and double-click the one you want.

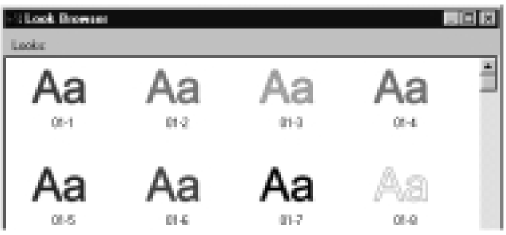


To change the point size of text, type a new value into the *Size field* or click the arrow buttons.

To change text to bold, italic and/or underline, select the text to be changed. For bold, italic and underline, click the corresponding button in the *Editor menu bar,* or use the shortcuts (<Ctrl> + <B>), (<Ctrl> + <I>) and (<Ctrl> + <U>).

Applying Looks to Text and Objects

One of TitleDeko’s most powerful features is its library of preset looks. Looks include color, texture and transparency attributes that are applied to the face, edge and shadow of objects. With a click of the mouse you can instantly change the appearance of an object from glowing purple neon to blue metallic.



To select and change looks, click the *Looks button*. The *Looks browser* graphically displays the looks you can pick. Just double-click the look you want.

Justifying Text

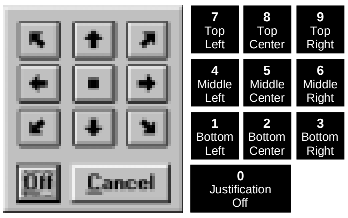
Justification operates differently in a video character generator than in a word processor. TitleDeko uses justification controls to position all objects, including rectangles and ellipses, as well as text. You can *Justify* objects via menu selections, buttons, keyboard shortcuts and keypad shortcuts. The next sections explain how to use these techniques.

Justification Buttons

Three buttons provide access to the same functions: *Justify, Horizontal Justify, and Vertical Justify*.

The *Justify button* provides the same *Bottom, Middle, Top* functions as does the *Justify menu*, and also has *Left, Center, Right* controls for each. Click the *Justify button* to display a grid that resembles a tic-tac-toe grid. To use the grid, select the text or object, and click the button that indicates how you want the text justified, or where you want the object positioned.

Keypad The numeric keypad also emulates the functions of the grid, and thus offers a quick way to position or justify text and other objects, which is particularly useful if you have many repetitions to do. Hold down the `Ctrl` key, and press one of the numbers on the numeric keypad to quickly justify text (and objects) . Notice that the position of the marker in the grid button changes as do the Horizontal and Vertical Justification buttons.

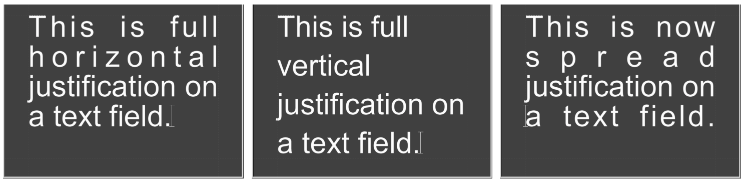


7 Top Left	8 Top Center	9 Top Right
4 Middle Left	5 Middle Center	6 Middle Right
1 Bottom Left	2 Bottom Center	3 Bottom Right
0 Justification Off		

The *Horizontal* and *Vertical Justify buttons* display controls to manipulate text and objects in those axes. In addition, these buttons also contain *Full* and *Spread* functions that apply only to text. Select the text or object, click the button that indicates how you want the text justified or where you want the object positioned. The choices are obvious except for *Full* and *Spread*.

Full Horizontal, Full Vertical and Spread Justification

Full horizontal justification makes the text flush or even with both the left and right sides of the text field box, except for the last line of text which remains left justified. Full vertical justification makes the text flush or even with both the top and bottom of the text field box. Spread justification makes all lines of text flush with both the left and right sides of the text field box, including the last line.



This is full horizontal justification on a text field.

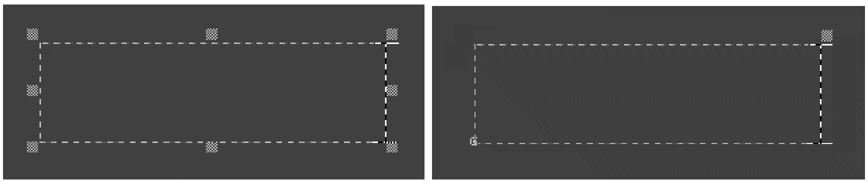
This is full vertical justification on a text field.

This is now spread justification on a text field.

TOOLS AND SELECTION HANDLES

Three buttons (*Move/Resize*, *Rotate/Skew*, and *Kerning/Leading*) have dual functions depending on the handle you select. The current function is denoted by cursor shape. The following text explains these cursor shapes and how they function on text and other objects.

When you select an object, handles appear on the corners and midpoints as shown in the illustration on the left. In the case of Rotate and Skew, a single handle appears in the upper right corner as shown on the right.

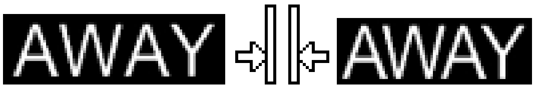


Kerning/leading Tool

This multifunction tool is used to change several characteristics. The Kerning and Leading cursors appear only on the handles.

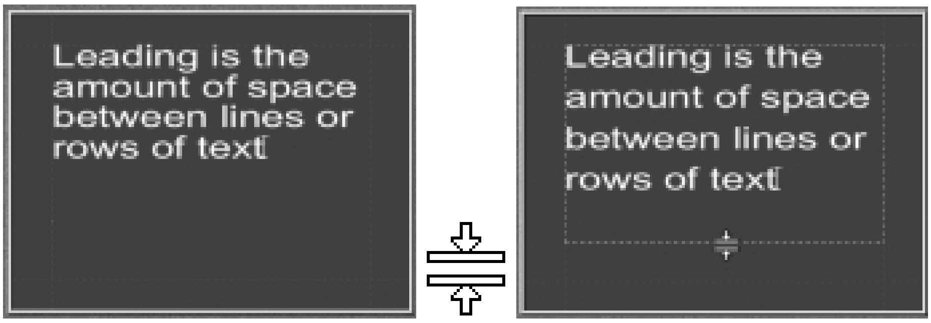
Kerning

Kerning is adjustment of the space between words and letters. Kerning is typically used for very large letters. Some characters in combination produce spacing that is visually unpleasant.



To kern text, click the *Kerning/Leading button*, select the characters to kern, hold down `Alt` and press the right/left arrows to increase/reduce the space between selected characters. Or, use the cursor to drag the handle at either side of the selected text.

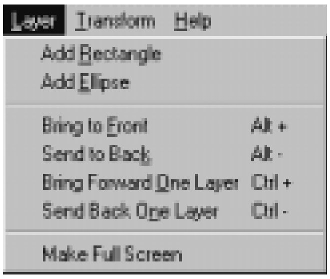
Leading


Leading is the amount of space between lines or rows of text
Leading is the amount of space between lines or rows of text

Leading is the amount of space between lines of text. To change the leading, click the *Kerning/Leading button*, select the text, and use the cursor to drag one of the handles above or below the text block.

Layers

Layers allow you to put one object in front of another. To move a layer forward or backward, select the object. From the *Layer* menu, choose one of the menu commands such as *Layer > Send Back One Layer*, or press its command key equivalent (<Ctrl> + [-]).



TRANSFORMING TEXT AND OBJECTS

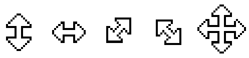
Move/Resize Tool

Moving

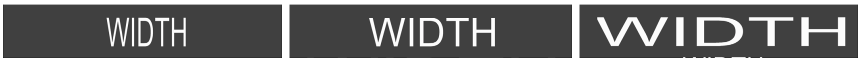
The Move cursor indicates moving is enabled. It appears anywhere on the selection box except at the handles.

Resizing

Corner handles control height and width together; middle handles on the right or left control width only; and middle handles on the top or bottom control height only. Hold down <Ctrl> while dragging a corner handle to constrain the aspect ratio during scaling.

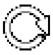


In the following example, the word in the center has not been changed. The widths of the words on the left and right are narrowed and expanded respectively.



Rotate/Skew Tool

Rotating



The Rotate cursor indicates rotating is enabled. It appears anywhere on the selection box, except at the upper right handle.

Skewing

The Skew cursor appears only when you position it on the upper right handle. Use the Skew function to make objects appear slanted.

USING AND MODIFYING LOOKS AND STYLES

About Looks and Styles

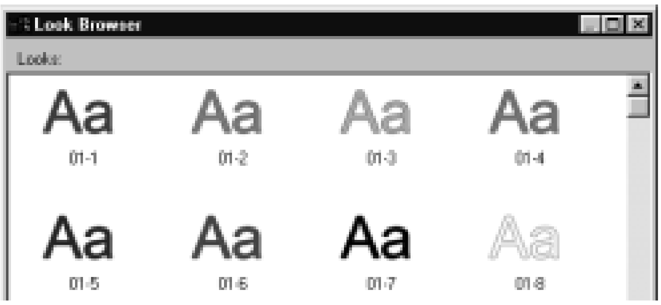
Looks A you have seen, applying a look changes the appearance of text and objects. A look consists of a face, edge and shadow. Each of those has a variety of parameters you can also adjust.

Styles A style includes a look, plus any other formatting or transformations that can be applied to text or objects. For example, styles can include typeface, size, and rotation, in addition to a look.

Applying Looks to Text and Objects

To select and change looks, click the *Looks button*.

The *Looks browser* graphically displays the looks you can pick. Just double-click the look you want.



Editing Looks

To create your own custom effect, change the detail attributes of the current look. You cannot save your changes in the *Looks browser*. However, you can save them as part of a style.

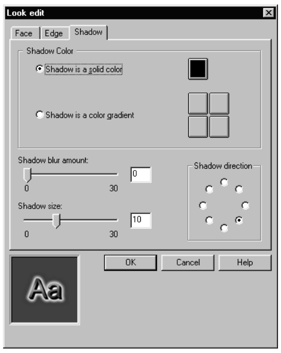
Details Each look detail (face, edge or shadow) has its own set of attributes such as color, size and blur, which you change to create a custom look. The face is the font rendered in the current attributes. The edge is an additional line around the face, and the shadow is an offset second image of the face and the edge.

Select *View > Look Editor*, or click the *Edit Current Look button*. The *Look Editor* window appears, with a tab for each of the three details.

The Details and Attributes

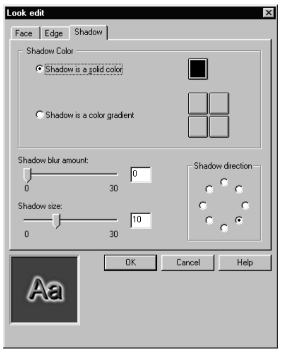
Most of the Attribute controls are obvious, so the following does not explain those in depth. In addition, a small preview window in the lower left corner shows your adjustments, which makes it easy for you to experiment.

Face



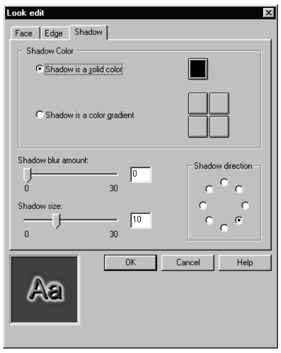
Shadow Color
● Shadow is a solid color
○ Shadow is a color gradient
Shadow blur amount: 0 (0–30)
Shadow size: 10 (0–30)

Edge



Shadow Color
● Shadow is a solid color
○ Shadow is a color gradient
Shadow blur amount: 0 (0–30)
Shadow size: 10 (0–30)

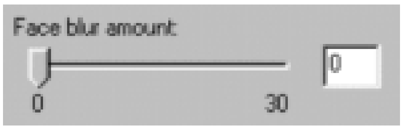
Shadow



Shadow Color
● Shadow is a solid color
○ Shadow is a color gradient
Shadow blur amount: 0 (0–30)
Shadow size: 10 (0–30)

Face, edge and shadow details have several items in common:

- Choice of solid or gradient colors. These operate the same was as described later in this chapter in the section on Backgrounds.
- A *Blur slider*, which varies the fuzziness of the face, edge or shadow detail. You can adjust the slider, or type in a precise number.



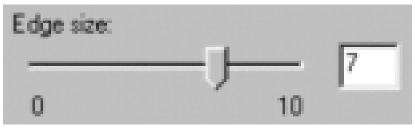
Face blur amount: 0

Face, edge and shadow details differ in these respects:

- The face detail has a checkbox that turns off the face altogether, leaving only the edge and shadow.

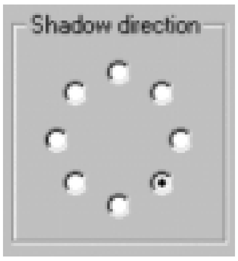
☐ Face is hidden

- The edge and shadow details allow adjustment of the edge or shadow size and thickness. Make adjustments either with the slider, or by typing in a precise value.



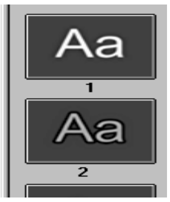
Edge size: 7

- The shadow detail also allows you to change the direction of the imaginary light source that creates the shadow.



Accessing the Style Window

Styles are accessed in the *Style window*.

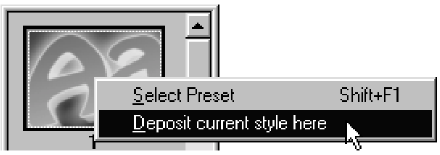


To display the *Style window*, select *View > Preset Styles* or *Window > Style*s from the menu bar. The *Style window* contains graphic representations of 24 Preset Styles. To select a style, double-click on it.

Style window

Creating your own Styles

You can replace any of the 24 Preset Styles with a style of your own. Create text or an object with the attributes you want for your new style. right-click on the Preset Style you wish to replace. Select *Deposit Current Style Here*.

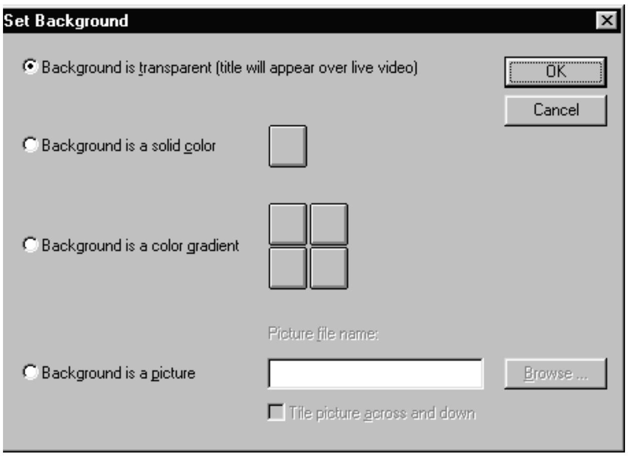


THE BACKGROUND

Backgrounds fill the screen behind all the text and objects. Titles can have a transparent background, in which case the text and objects appear directly on top of the video. They can alternatively have a solid or gradient color background. A color background can either be opaque (no underlying video is visible), or semi-opaque (allowing the video to show through the color background). TitleDeko also allows the option of importing a picture to use as the background.

Replace Background Window

You control all aspects of the background with the *Replace Background window*.



Set Background

● Background is transparent (title will appear over live video)

○ Background is a solid color

○ Background is a color gradient

○ Background is a picture

Picture file name:

☐ Tile picture across and down

Transparent Backgrounds

Select *Background is transparent* to create a transparent title with no background. This is the default choice for Background.

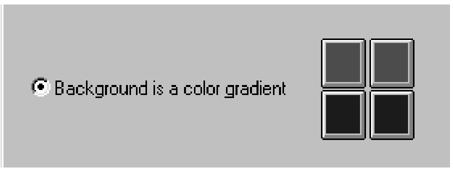
For a transparent or semitransparent title, you must also select Alpha Channel as your Key Type from the Adobe Premiere Transparency Settings window.

Solid Color Backgrounds

To use a solid color as a background, select *Background is a solid color*. This creates a background consisting of a single color. This background could be semitransparent, if the opacity is set between 0 and 100 percent.

Gradient Backgrounds

To use a gradient background, select *Background is a color gradient*. Gradient backgrounds consist of two or more colors that are blended smoothly together. Each color can have its own level of opacity.



● Background is a color gradient

To make the top a single color that merges into a single color at the bottom, choose the same color for both the top and bottom sets of Color buttons.

Picture Backgrounds

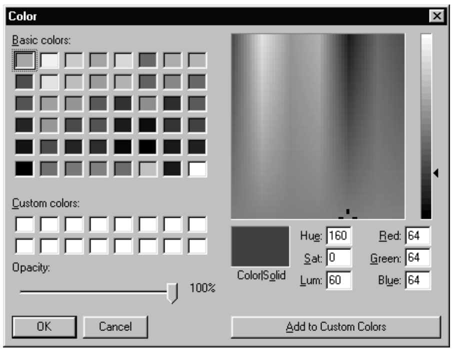
To use a picture as the background, select *Background is a picture*. Type in the path name, or click the *Browse button*, navigate to the directory that contains the file, and choose the file.

Selecting Colors and Opacity

Colors

Color Picker

To select color and opacity for a solid or gradient background, click on the corresponding *Color button*. The *Color Picker* appears. Except for opacity, the choices in this screen are self-explanatory and conform to Windows Color Picker standards.

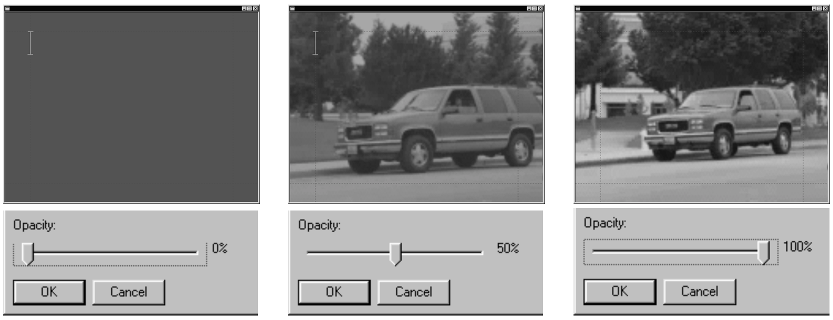


Opacity: 100%

Hue: 160
Sat: 0
Lum: 60
Red: 64
Green: 64
Blue: 64

Opacity

The following illustrations show that, as you adjust the O*pacity slider* down from 100%, the background becomes increasingly transparent.



Opacity: 0%

Opacity: 50%

Opacity: 100%

LET’S MAKE A TITLE

Example 1 creates a basic title and inserts it into the Timeline in Adobe Premiere. Examples 2, 3,and 4 build on this basic title to show more advanced TitleDeko features.

Example 2 enhances the text in a number of ways, including resizing, rotating and skewing. This example also adds a shape behind the text, to which a style is applied.

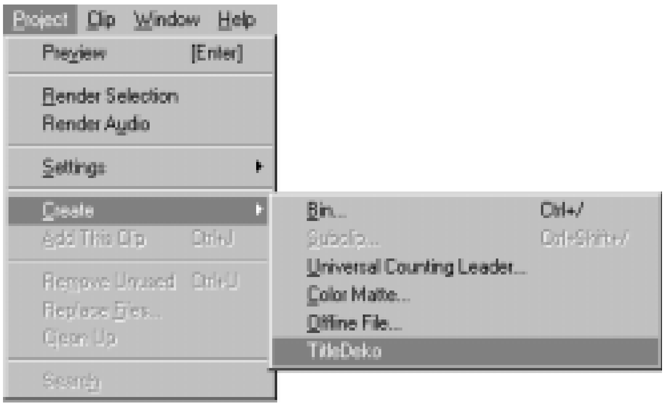
Example 3 creates a Roll. This allows the title to roll vertically from the bottom of the screen to the top. It also trims the title from the Adobe Premiere Timeline.

Example 4 creates a scrollable crawl. This allows the more than one frame of title text to crawl horizontally from the left of the screen, toward the right. You also trim the title from the Main Menu Bar of Adobe Premiere.

Example 1:
Creating a Basic Title

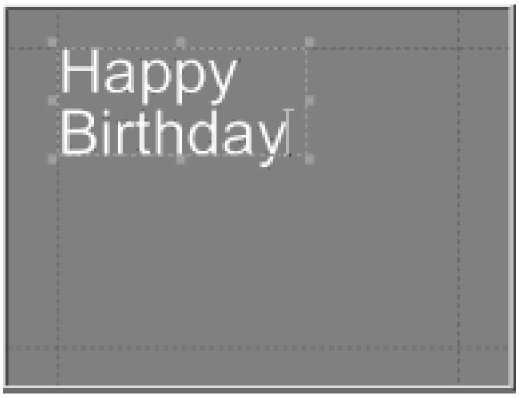
This example launches TitleDeko from Adobe Premiere, creates a basic title, and returns you to Adobe Premiere.

1. **Launch TitleDeko from the Main Menu Bar of Adobe Premiere.** Choose *Project* > *Create,* then click *TitleDeko*.



2. **Enter the title text.**

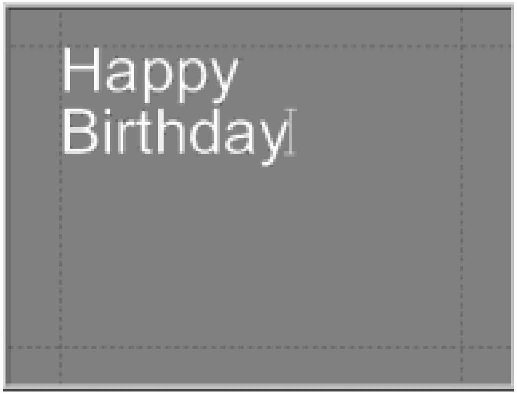
   TitleDeko launches and a text I-Beam cursor awaits text entry. Type the words: **`Happy Birthday`** You will change the type size and apply a new style to it, but you must first select the text.



Happy Birthday

3. **Select the text.**

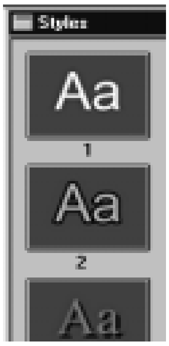
   Press <Ctrl> + <A> to select the text. A selection box, with handles on its sides, now surrounds the text.



Happy Birthday

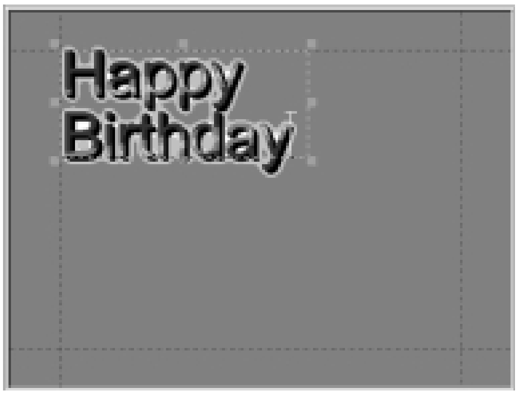
4. **Apply a Preset Style to the text.**

   A sampling of styles is displayed in the window to the right of the Preview Area. (If the Style window is not visible, select *View* > *Preset Styles*.) Scroll down to number *5* and click it.



5. **Check your progress.**

   The style characteristics are applied to the text:

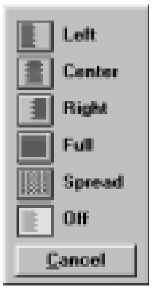


6. **Proportionally shrink the text.**

   Click the *Move/Resize tool button*. To resize the text, click anywhere on the text field then press <Ctrl> + <A> to select it, then position the cursor on the lower right handle while pressing the <Ctrl> key to proportionally shrink the text.

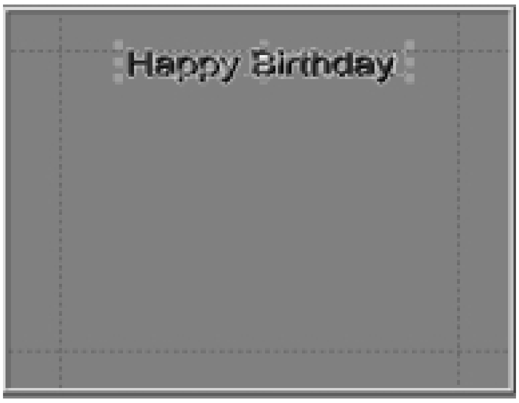
7. **Center the text horizontally.**

   To center the text, click the *Horizontal Justify button* to display its pop-up choices. Click the *center* button.



8. **Check your progress.**

   Your title is centered, and appears as follows:

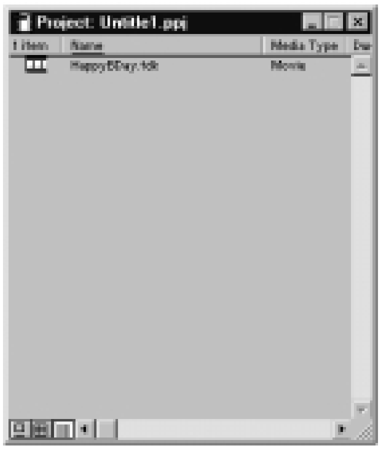


9. Save the title.

Click the *Save button* to save the Still.

10. Return to Adobe Premiere.

Press <F12> to accept the title and return to Adobe Premiere.

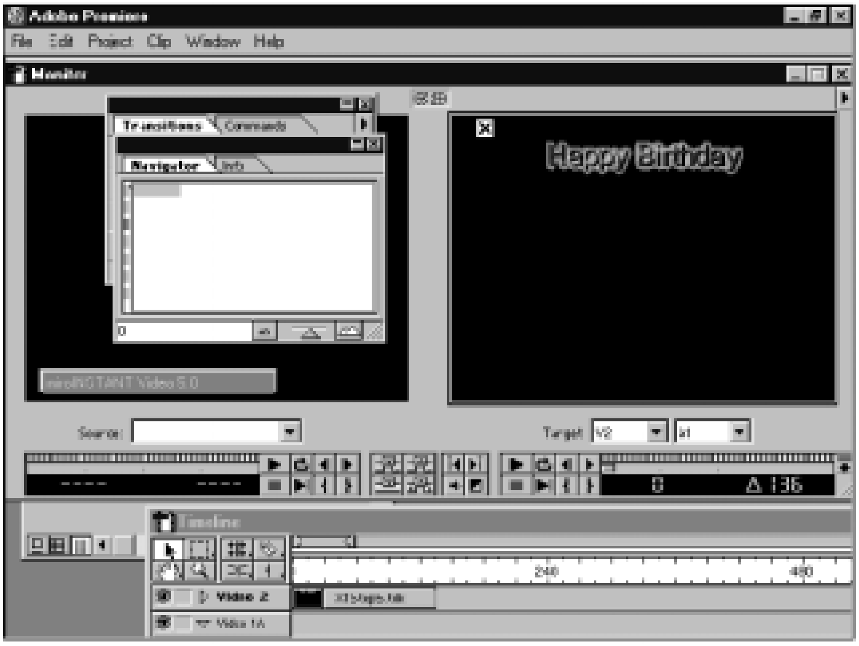


Trim the title.

You return to Adobe Premiere from TitleDeko. Adobe Premiere places the title in the Project window.

From here, drag the title to the Timeline and place it on Video 2, or the top video channel. On the Timeline, place the cursor on the title icon. Right click the icon.

Select *Video > Transparency* to view the *Transparency Settings window*. From the *Key Type* drop down list, choose *Alpha Channel*. Click *OK*. Click the Player buttons to preview your work.



Example 2:
Modifying the Text

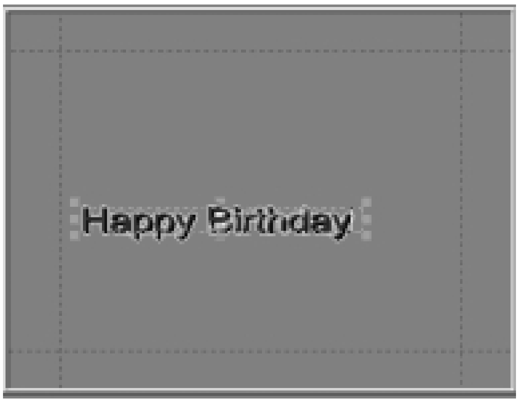
In this example, you enhance the title created in Example 1 by rotating and skewing the text.

1. **Launch TitleDeko from an existing Adobe Premiere project.**

   Double-click the title on the Timeline, or in the Project window.

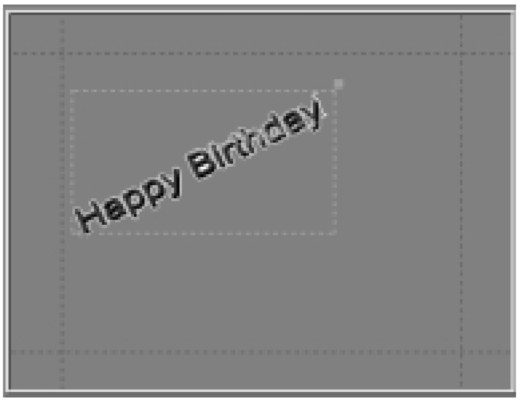
2. **Move the title text.**

   Click the *Move/Resize button*. Select the text and position the cursor anywhere within the text or on the border (except on the handles) so the cursor is a Move symbol that looks like a cross. Experiment with moving the text.



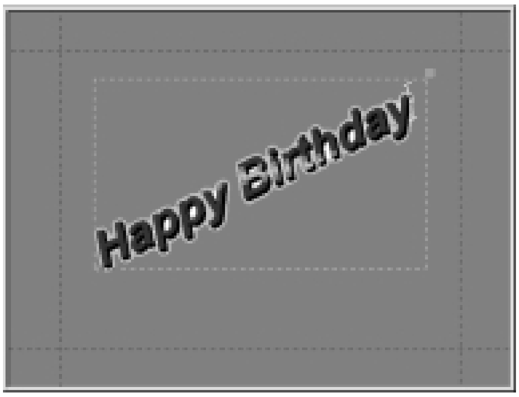
3. **Rotate the text.**

   Click the *Rotate/Skew button*. Rotate the text.



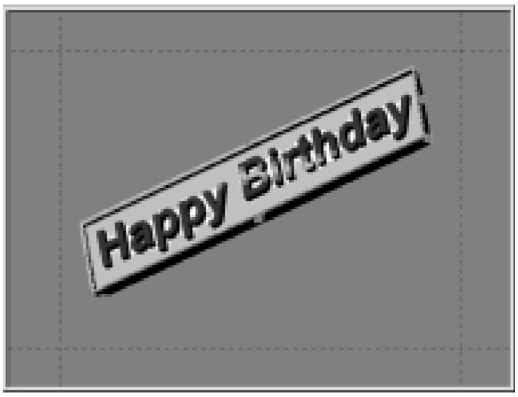
4. **Apply a combination of formatting techniques.**

   In the following illustration, Style 4 was applied to the text. The selection was rotated, made bold, and resized. The Rotate/Skew tool was used to skew the text, by grabbing the upper right handle with the Skew cursor.



5. **Add and transform a rectangle.**

   Click the *Rectangle button*. A white rectangle appears. Click the *Move/Resize button* and resize the rectangle. Click the *Rotate/Skew button*, grab the upper right handle and skew the rectangle. Position the Rotate/Skew cursor over the shape and rotate it to match the text angle. Click the *Style 8* icon. Move the shape over the text and select *Layer > Send to Back* from the menu bar.



6. **Save the title.**

   Click the *Save button* to save the Still.

7. **Return to Adobe Premiere**

   Press <F12> to accept the title and return to Adobe Premiere.

Example 3:
Creating a Roll

In this example, you create a title selecting *Roll* as the File Type. This will allow the title to roll vertically from the bottom of the screen, to the top. You also trim the title from the Timeline.

1. **Launch TitleDeko from the Main Menu Bar of Adobe Premiere.**

   Choose *Project* > *Create*, then click *TitleDeko*.

2. **Enter the title text.**

   TitleDeko launches and a text I-Beam cursor awaits text entry. Type the words: **`Best Wishes from Your Fan Club on Your Birthday.`** You will change the type size and apply a new style to it, but you must first select the text.

3. **Select the text.**

   Press <Ctrl> + <A> to select the text. A selection box, with handles on its sides, now surrounds the text.

4. **Apply a Preset Style to the text.**

   A sampling of styles is displayed in the window to the right of the Preview Area. (If the Style window is not visible, select *View* > *Preset Styles*.) Scroll down to number *2*and click it.

5. **Center the text horizontally.**

   To center the text, click the *Horizontal Justify button* to display its pop-up choices. Click the *center* button.

6. **Fully Justify the Text Vertically.**

   Click the *Vertical Justify button* to display its pop-up choices. Click the *Full* button.

7. **Make the title a Roll.**

   Click the *File Type* drop-down arrow. Select *Roll*.

8. **Save the title.**

   Click the *Save* button to save the Roll.

9. **Return to Adobe Premiere**.

   Press <F12> to accept the title and return to Adobe Premiere.

10. **Trim the title.**

    Right click the title icon on the Timeline. Do one of the following:

    - Select *Duration*, and enter a new duration. Click *OK*.
    - Select *Speed*, and enter a new rate. You can also enter a new duration from this *Clip Speed window*. Click *OK*.

Selecting Roll or Crawl allows you to use more text than will fit in the video safe area. Select *File* > *Scrollable* to roll or crawl additional text.

Example 4:
Creating a Scrollable Crawl

In this example, you launch TitleDeko and create a scrollable crawl. This will allow the title to crawl horizontally from the left of the screen, toward the right. You also trim the title from the Main Menu Bar of Adobe Premiere.

1. **Launch TitleDeko from the Main Menu Bar of Adobe Premiere.**

   Choose *Project* > *Create*, then click *TitleDeko*.

2. **Enter the title text.**

   TitleDeko launches and a text I-Beam cursor awaits text entry. Type the words: `Happy Birthday to You! Happy Birthday to You! Happy Birthday, Dear You!`

3. **Select the text.**

   Press <Ctrl> + <A> to select the text. The text is now surrounded by a selection box with handles on its sides.

4. **Apply a Preset Style to the text.**

   A sampling of styles is displayed in the window to the right of the Preview Area. (If the Style window is not visible, select *View* > *Preset Styles*.) Scroll down to number *3* and click it.

5. **Make this title a Crawl.**

   Click the *File Type* drop-down arrow. Select *Crawl*.

6. **Allow more than one frame of text to crawl.**

   Click *File* > *Scrollable*.

7. **Save the title.**

   Click the *Save button* to save the Crawl.

8. **Return to Adobe Premiere.**

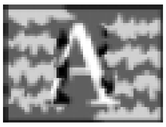
   Press <F12> to accept the title and return to Adobe Premiere.

9. **Trim the title.**

   Do one of the following:

   - Select *Clip* > *Duration*, and enter a new duration. Click *OK*.
   - Select *Clip* > *Speed*, and enter a new rate. You can also enter a new duration from this *Clip Speed window*. Click *OK*.

You can also adjust the duration of the title by dragging the left and right edges of the title icon on the Timeline.



Chapter 15: Video SpiceRack

KEY CONCEPTS OF VIDEO SPICERACK

Video SpiceRack offers a collection of 300 top-quality transitions and dynamic effects. The key concepts and possibilities are explained below:

- Video SpiceRack uses grayscale “gradient” images - specially designed for video - to create custom transitions and effects.

  For further details, please refer to the section “How does a gradient image make a transition?”.
- To easily choose from the vast range of Video SpiceRack alternatives, we’ve organized our effects into distinct categories.

  Video SpiceRack gradients are organized into five groups, as shown in the section “Video SpiceRack Categories”. The five groups together hold several categories of transitions. Each category is visually distinct and in a separate folder, making it relatively easy to compare and choose from the available effects.

HOW DOES A GRADIENT IMAGE MAKE A TRANSITION?

In short, the magic is in a gradient’s grayscales (also known as the luminance).Your host editing application reads the grayscale value - from 0 (black) to 255 (white) - of each pixel in a gradient image that you select. Those values then generate a wipe transition - a line, shape, texture or pattern that will “wipe” away one image to reveal the next image. Pixels in Image B will replace Image A first where the gradient’s darkest pixels reside, then in progressively lighter gray areas, and finally where the brightest pixels sit.

By reducing opacity along the moving edge, most editing applications can soften a gradient transition *much more* than other transitions. You can therefore create intriguing directional dissolves, soft dynamic mattes, or split-screens, and more. From a base of 300 spices, you really have the seasoning for an incredible number of visual effects.

To help you select transitions quickly, we’ve included a quick-reference card in your Video SpiceRack package. It illustrates our effects, organized by the same visual categories.

VIDEO SPICERACK CATEGORIES

Cool Wipes

More than seventy “coolest of the cool” transitions:

- Patterns - Attractive wipes formed by simple, repeated geometries
- Progressions - Playful pixels that fill the frame in progressive steps
- TransActive - A killer collection of stunning eye-catcher transitions
- Videogami - Unique folding wipes that evoke origami as they open.

Pure & Simple

Over seventy simple, elegantly flowing transitions:

- Edge2Edge - Fresh wipes that travel cleanly across the frame
- Iris Essentials - Meaningful symbols and shapes that grow to reveal
- Splits -Creative new approaches to splitting images in half
- Thirds - Transitions that flow along third-points in the frame
- TruQuads -Useful ways to slice and wipe in frame quadrants.

Organix

Break from the usual with seventy live edges:

- Kaleidos - Amazing kaleidoscopic patterns that open images
- Livelrises - Irises featuring a wide variety of dynamic edges
- LiveWipes - Cool edge dynamics applied to standard wipe styles
- Textures - Natural textures that organically evolve to reveal.

WonderBands

Fifty band effects to extend your visual repertoire:

- Radiant - Novas, rays, waves and other effects
- Uniform - New styles of uniform-size bands that move and grow
- Variable - Variable-size band-like effects.

Standards Plus

Iris and wipe transition standards you can easily soften or customize to an unlimited degree - leading to fresh visual treatments.

HOW TO USE SPICERACK

For more information on how to use Video SpiceRack under Adobe Premiere, please refer to chapter 11 “Transitions, Filters and Superimpositions”.

Important

The Pixèlan SpiceRack effects

- Powder_d.png
- Powder-h.png
- Powder_v.png
- Powder1.png
- Powder2.png

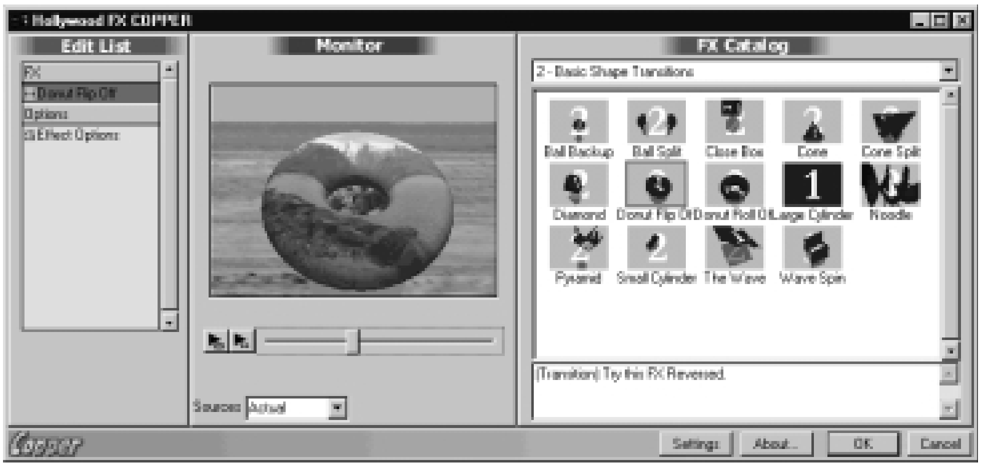
can only be played in real-time, if you do not use the *Border* function.

Chapter 16:
Hollywood FX

This chapter will give you a short description of the software “Hollywood FX Copper” which is included in the DV500 package.

WHAT IS HOLLYWOOD FX?

With the easy-to-use Hollywood FX software you can generate 3D transitions and effects for your videos. Hollywood FX is utilizing DirectX and OpenGL graphics accelerators and therefore is able to generate near realtime effects.



(Transition) Try this FX Reversed.

Hollywood FX Copper

Hollywood FX Copper is working as a Plugin in Adobe Premiere 5 and provides you with:

- 100 true 3D transitions
- simple control over flight direction
- Lighting
- Shadows
- Antialiasing

Hollywood FX Bronze, Silver, Gold

If you wish to extend your possibilities in generating transitions and effects, you can upgrade your system with the more extensive Hollywood FX products “Bronze”, “Silver”, or “Gold”.

These versions

- offer more transitions and effects,
- enable you to realize more of your own ideas, and
- you can freely create your own effects.

Club Hollywood

Club Hollywood is an Internet FX Mall where new effects are being added all the time. The access to Club Hollywood is **free** for all Hollywood FX product owners. When you register you receive initial credit you can use towards any of the effects in Club Hollywood.

For more detailed information, please refer to the Hollywood FX website **www.hollywoodfx.com**.

INSTALLATION OF HOLLYWOOD FX

If your system meets the DV500 system requirements (see chapter 2 of this manual), Hollywood FX will work without problems. Before the installation, please ensure that you have at least 20 MB free space on your harddisk.

Hollywood FX is not automatically installed during the DV500 installation. For installing this software, please insert the Hollywood FX CD into your CD-ROM drive - the CD-ROM welcome dialog will appear.

Enter the **serial number** that came with your software. It can be found on the CD-ROM sleeve. Now, please follow the on-screen instructions.

Registration of Hollywood FX

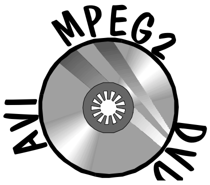
After installation you can use Hollywood FX for 30 days before the temporary license expires. You must register to obtain a permanent license **keycode** for your software. During installation your unique **machine id** will be displayed which must be provided along with your **serial number** during registration. In return you will receive a **keycode** that can be entered by selecting *Programs/Hollywood FX/ Enter Your Permanent Key Code* from the *Start* menu.

The easiest way to register your software and obtain your **keycode** is via the web: **www.hollywoodfx.com**.

Your **machine id** and your **serial number** can be viewed again by selecting *About* in the Hollywood FX dialog, or by selecting *Programs/Hollywood FX/Enter Your Permanent Key Code* from the *Start* menu.

Online Documentation

For more detailed information on working with Hollywood FX, please refer to the User's Guide on the Hollywood FX CD.



Chapter 17:
Export to AVI, DV- or MPEG2

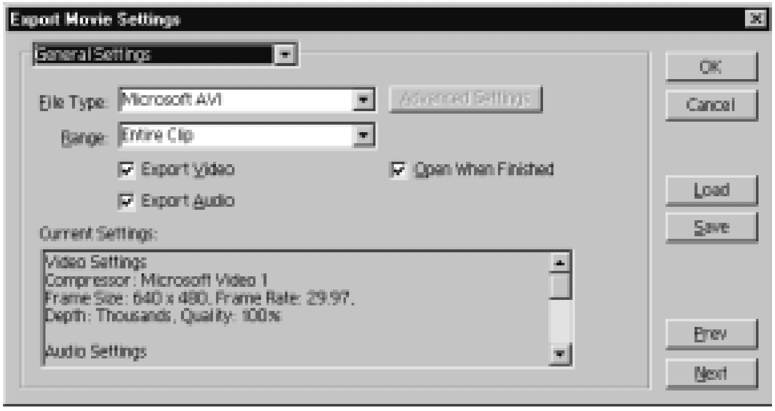
SETTING –MPEG FORMAT

DV500 not only outputs your finished production to tape, it also allows you to export to a variety of formats. This enables production targets like DVD, and MPEG2-CD.

EXPORT TO MPEG2

Exporting to MPEG2 is useful if your production target is a DVD or MPEG2-CD. During this process, your project will be rendered into separate video and audio files that are compatible with authoring applications like Minerva Impression. Since the DV500 includes a hardware MPEG2 encoder, the export process is much faster than software-based solutions while providing an excellent level of quality.

1. To start the export process from Adobe Premiere, select the *File* menu, the commands *Export* and *Movies* and click on the *Settings* button. The *Export Movie Settings - General Settings* appears.



File Type: Microsoft AVI
Range: Entire Clip
☑ Export Video
☑ Open When Finished
☑ Export Audio
Current Settings:
Video Settings
Compressor : Microsoft Video 1
Frame Size: 640 x 480, Frame Rate: 29.97,
Depth: Thousands, Quality: 100%

Audio Settings

2. Click the *Load* button to view the list of presets and choose one DV500 preset ("Pinnacle DVD" or "Pinnacle MPEG2-CD") appropriate for your production target. This is the safest way to select the correct settings and is highly recommended.
3. Now click *OK* to close the dialog. Type in a filename and click *OK* again to start the export. The files will be generated.

Note that the speed of the export process depends on a number of factors:

- Any AVI files in your project, will be rendered to the export format and this will require some time.
- Any areas with transitions, filters, titles or other effects will also be rendered and will require some time. A project with a lot of effects will thus take longer to export than one with few effects.

A WAV file is uncompressed PCM-coded audio and is best when the production target is DVD. An MPA file contains MPEG1-compressed audio and should be used for MPEG2-CD production.

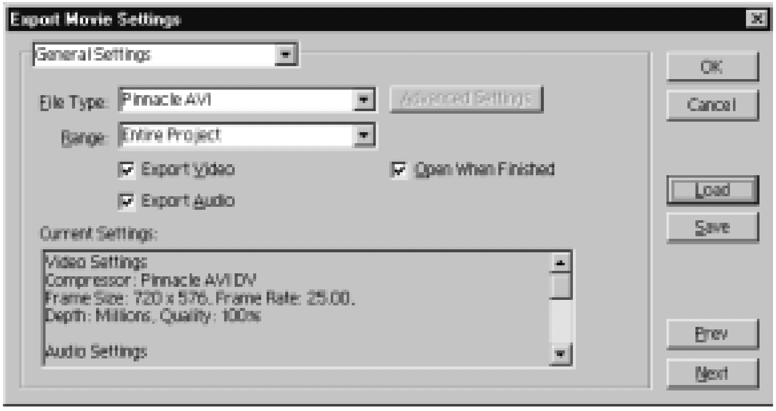
If you installed Minerva Impression, then the exported MPEG2 files will also play back when you double-click them, using the Windows Media Player. However, audio will not be played, as it is stored in a separate file. Remember that you can also bring the clip into Premiere and play it there, including audio.

EXPORT TO DV AVI

Exporting an AVI file is useful if your production target is Internet streaming video. Many streaming video tools such as Microsoft Media Tools and RealNetworks RealProducer will accept AVI files and convert them to a highly compressed format suitable for the low bandwidth of the Internet.

Exported AVIs can also be used to archive your projects. An AVI contains both the video and audio in one file.

To start the AVI export process from Adobe Premiere, select the *File* menu, the commands *Export* and *Movies* and click on the *Settings* button. The *Export Movie Settings - General Settings* appears.



File Type: Pinnacle AVI

Range: Entire Project

☑ Export Video

☑ Export Audio

☑ Open When Finished

Current Settings:

Video Settings
Compressor: Pinnacle AVI DV
Frame Size: 720 x 576, Frame Rate: 25.00,
Depth: Millions, Quality: 100%

Audio Settings

- Click on the *Load* button and select the Pinnacle AVI DV preset appropriate for your video standard (NTSC/PAL). Then click *OK* to close the dialog. Type in a filename and click *OK* again to start the export. The AVI file will be generated.

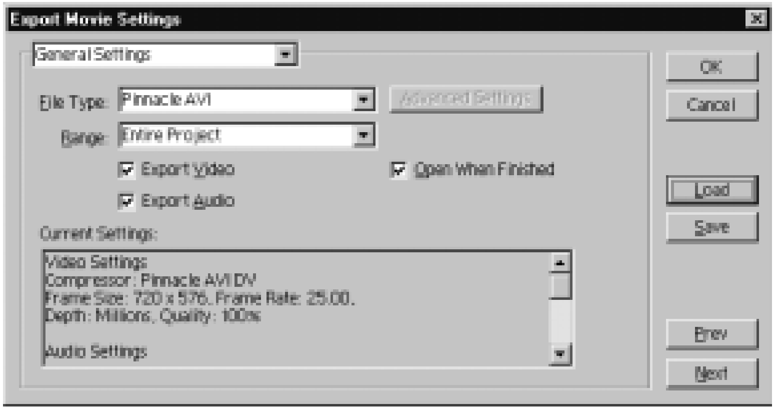
AVI files can be played back outside of Premiere using the Windows Media Player simply by double-clicking them.

ADVANCED EXPORT SETTINGS

If the Pinnacle export presets provided do not match your specific needs, then you can configure the export of MPEG2 and AVI files in a variety of ways. This section describes the settings specific to DV500—please also refer to the Adobe Premiere User's Manual for further details.

It is much easier to load a Pinnacle export preset and then modify the settings than to try to do all settings from scratch.

Export Movie Settings—General Settings



General Settings

File Type: Pinnacle AVI

Range: Entire Project

☑ Export Video

☑ Export Audio

☑ Open When Finished

Current Settings:

Video Settings
Compressor: Pinnacle AVI DV
Frame Size: 720 x 576, Frame Rate: 25.00,
Depth: Millions, Quality: 100%

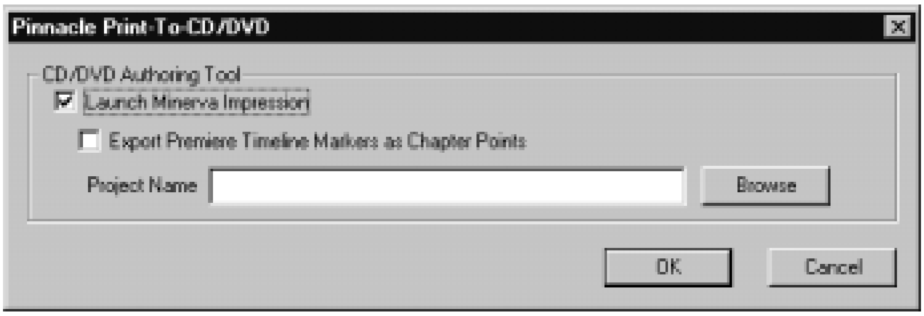
Audio Settings

File Type

Select "Pinnacle DVD" or "Pinnacle MPEG2-CD" to export MPEG2 files of the format MP@ML, suitable for DVD and MPEG2-CD authoring. Select "Pinnacle AVI DV " to export DV-coded AVI files. If you would like to export an AVI using a software compressor, then select *Microsoft AVI*.

Advanced Settings

When you select *"Pinnacle DVD"* or *"Pinnacle MPEG2-CD"* as *File Type*, the *Advanced Settings* button becomes active. Clicking it will open the Pinnacle *Print-To-CD/DVD* dialog. It will allow you to automatically start Minerva Impression and transfer the exported files to it.



Pinnacle Print-To-CD/DVD

CD/DVD Authoring Tool

☑ Launch Minerva Impression

☐ Export Premiere Timeline Markers as Chapter Points

Project Name:

Launch Minerva Impression

If this box is checked, Minerva Impression will start automatically once the export is finished. The following options are only available if this option is turned on.

Export Premiere Timeline Markers as Chapter Points

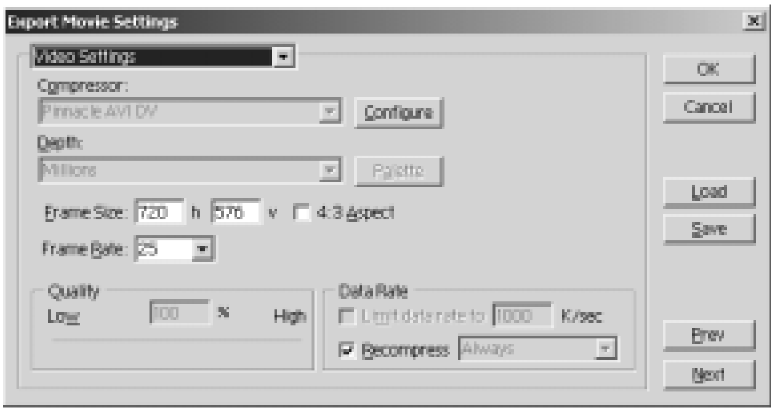
If this box is checked, any timeline markers that were set in the project will be transferred to Minerva Impression and will be interpreted there as chapter marks. Chapter marks are points within the exported clips that you can later assign menu buttons to.

Project Name

The name in this text box will be used for the Minerva Impression project file. You may select a project that already exists by clicking the Browse button - in this case, the exported MP2/WAV files will be appended to the end of the project.

If the text box is left blank, a new project will be created that uses the name you selected for the MP2/WAV file.

Export Movie Settings—Video Settings



Export Movie Settings

Video Settings

Compressor: Pinnacle AVI DV

Depth: Millions

Frame Size: 720 h 576 v ☐ 4:3 Aspect

Frame Rate: 25

Quality: Low 100 % High

Data Rate: ☐ Limit data rate to 1000 K/sec

☑ Recompress Always

Compressor

The compressor is already selected for AVI or MP2 export, according to the setting of *File Type* in the *General Settings* part of this dialog. If you selected *Microsoft AVI*, then you can choose and configure the software compressor here.

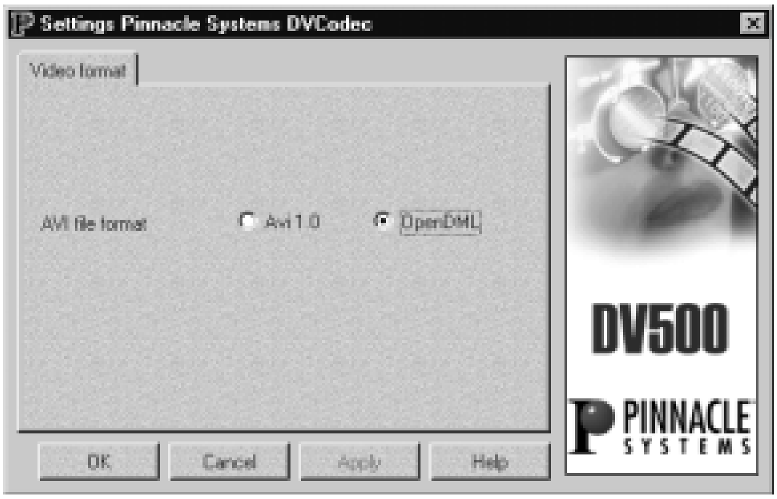
Recompress

When checked, this option always recompresses all the material in the timeline for the export. This means that all video gets decoded and then re-encoded. This is time-consuming and generally not required.

Configure

Click on the *Configure* button to open the settings dialog that allows you to adjust the details of the MPEG2 compression. Different parts of the dialog will be enabled, depending on your selection of AVI or MPEG2 file export.

DV format



AVI file format ○ Avi 1.0 ● OpenDML

Compressor "Pinnacle AVI DV"

The options *AVI 1.0* and *OpenDML* only appear if "Pinnacle AVI DV" is selected as compressor.

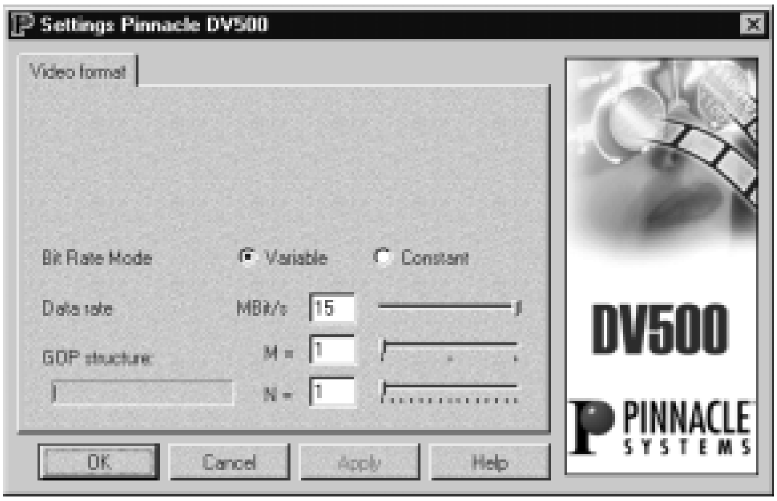
AVI file format

AVI 1.0
If you want to import an *.avi file into an application that does not support the *OpenDML* option, activate the *AVI 1.0* checkbox.

OpenDML
If you activate the *OpenDML* option, you can capture *.avi files, which exceed the 4 GB limitation. This is the recommended setting when working solely with Adobe Premiere RT.

Note that Windows 98 limits files to a maximum of 4 GB. If you use Windows NT or Windows 2000 and the file system NTFS, then files can be up to 12 TBytes long—which amounts to more than 50 days of video.

MP2 MPEG format



Bit Rate Mode ● Variable ○ Constant

Data rate MBit/s 15

GOP structure: M = 1 N = 1

Compressor “Pinnacle DVD” or “Pinnacle MPEG2-CD”

The options *GOP Length (N)* and *Ref. picture period (M),* the display of the *GOP structure,* and the *Data rate* option are only accessible if “Pinnacle DVD” or “Pinnacle MPEG2-CD” is selected as compressor.

Bit Rate Mode

Variable
If the option *Variable*is activated, the encoder of DV500 will try to keep constant the quality of the compressed material, the selected data rate being the maximum upper limit.

Constant
If you activate the option *Constant bit rate*, the video sequences will be recorded exactly with the selected data rate. The quality is allowed to vary.

At the moment Minerva Impression only supports the constant bit rate. If you want to use this application to create DVD or MPEG2 CDs you have to select the Constant bit rate option.

Data rate

When exporting to the MP2 format, the quality is not only set by the data rate, but also by the GOP structure. In general, the more P and B frames are selected for the GOP, the lower the required data rate will be for a given quality.

The DVD standard permits a maximum data rate for video **and audio** of 9.8 MBit/s. Note that the data rate selected in this dialog refers to the video portion only. For one stereo track of 48 kHz 16 bit PCM-codec audio, an additional rate of 1.536 Mbit/sec is required, so in this case, the video may not be above 8 MBit/s if your production target is DVD.

For MPEG2-CD production, you can go to higher data rates if the CDROM drives you will later use to play back your production will support this. However, high data rates will reduce the length of the video that will fit on a CD - as an example, at 8MBit/s, the maximum length is in the range of 10 minutes per CD.

Ref. Picture period (M)

Use the slider to select after how many B frames a reference picture (P frame) will appear. Default is 3. Together with a GOP length of 15 (see below) and a data rate of 8 MBit/s these settings correspond exactly to the DVD standard.

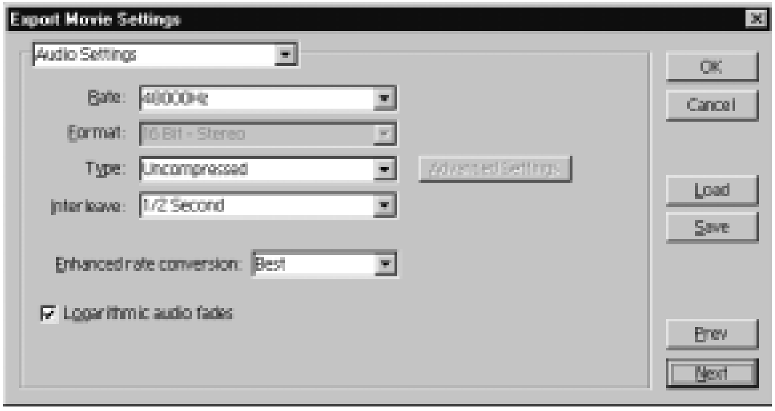
GOP Length (N)

Use the slider to adjust the GOP (**G**roup **O**f **P**ictures) length. Default is 15. For further information on the structure of a GOP, please refer to the chapter “MPEG image data compression” in the Appendix.

The structure of the GOP will be displayed.

For export to either DVD or MPEG2-CD, we recommend the settings N=15 and M=3, as this will give you the highest possible quality at a given data rate.

Export Movie Settings - Audio Settings


Export Movie Settings

Audio Settings

Rate: 48000Hz

Format: 16 Bit - Stereo

Type: Uncompressed

Interleave: 1/2 Second

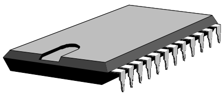
Enhanced rate conversion: Best

☑ Logarithmic audio fades

Type (for Export to MP2)

Select *Uncompressed* to export an uncompressed PCM audio file (WAV) alongside the MP2 video file. Select *Pinnacle MPEG1 Layer2* to export an MPEG1-compressed audio file (MPA) alongside the MP2 video file.

For DVD authoring, please use uncompressed audio, as some DVD players cannot handle MPEG1 audio.
For the production of MPEG2-CDs, MPEG1-compressed audio is the better choice, as it reduces the data rate by a factor of eight while still providing audio CD quality.



Chapter 18: Technical Data

Hardware

32-bit PCI busmaster expansion card

Data rate

2 x 25 MBit per second in dual stream mode
1 x 25 MBit per second in single stream mode

Frame rate

30/25 frames per second; 60/50 fields per second (NTSC/PAL)

Digitization and playback

In real-time. Resolution 720 x 576 (PAL/SECAM) or 720 x 480 (NTSC) in studio quality 4:2:2 YUV, TrueColor

Video inputs

1 x composite video (CVBS), cinch jack, high-quality PAL comb filter
1 x S-Video (Y/C), mini-DIN
2 x 6-pin DV jack
1 x 6-pin internal DV jack

Video outputs

1 x composite video (CVBS), cinch jack,
1 x S-Video (Y/C), mini-DIN
2 x 6-pin DV jack
1 x 6-pin internal DV jack

Video standard

PAL, NTSC (US Version NTSC only)

Video systems

DV, S-VHS, Hi8, VHS, Video8

Adjustable parameters

Brightness, contrast, saturation, color value.

Real-time effects

2-channel mixer with real-time bit manipulation

Video overlay

Video overlay chip for real-time monitoring on computer screen

Audio inputs/outputs

Stereo, 2 x cinch jack (blueBOX)
Stereo, 2 x cinch jack (blueBOX)

Audio level

Audio input
-50 dB - 12 dB, selectable

Audio output
-62 dB - 0 dB, selectable

Audio recording and playback

In real-time, directly to/from hard disk in full CD stereo audio quality. Selectable sampling formats: 16-bit stereo 44.1 kHz, 16-bit stereo 48 kHz, 12-bit stereo 32 kHz (DV).

NOTES

Appendix A:
MPEG Compression

THE COMPRESSION PROCEDURE MPEG

Why data compression?

Uncompressed video data is a tremendous amount of data. NTSC video for example has a resolution of 720 x 480 pixels and is transmitted with 29.97 frames per second. One second of an NTSC video needs 720 x 480 x 29.97 pixels of 16 bits, that is over 20 MBytes per second. This amount of data would fill a CDROM (650MBytes) in only 32 seconds.

Even if the video resolution is reduced to one quarter (SIF) or to a sixteenth, the result is still a data stream of more than one MByte/s. The data is compressed with the help of so called codecs (compressor / decompressor). There are two different types of codecs: hardware codecs and software codecs. Hardware codecs are usually the more powerful ones. Pinnacle DV500 is equipped with a dynamically loadable processor (RISC-CPU), which combines the advantages of a hardware codec (performance) and a software codec (variable).

What is MPEG?

Originally, MPEG is a work group within the ISO (International Standards Organization) / IEC (International Electrotechnical Commission), which develops standards for digital video and audio compression. The abbreviation “MPEG”, however, is more often used for the compression standard itself, developed by this group.

In general, the different types of MPEG compression are:

*.MPV **MP**EG-**V**ideo,

*.MPA **MP**EG-**A**udio

*.MPS **MP**EG-**S**ystem (also abbreviated as *.MPG) (a combination of both).

The MPEG video and audio compression schemes differ completely, as they are adapted to thevastly different human ways of perceiving audio and video.

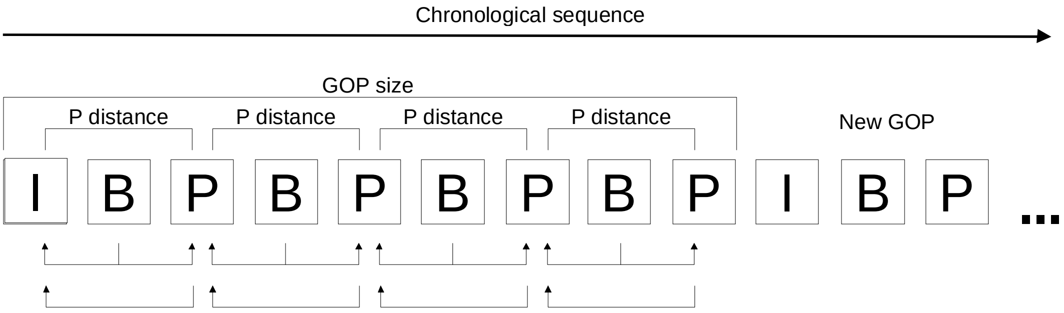
In the following, mainly MPEG video will be discussed.

How does MPEG-compression work?

In MPEG compression the data stream is first divided into different sections, the so called **GOPs** (**G**roup **o**f **P**ictures), each containing several frames. One GOP may consist of three types of frames: **I-Frames**, **P-Frames** and **B-Frames**. A typical GOP structure as you may find it on a DVD looks as follows:

IBBPBBPBBPBBPBB IBBPBBPBBPBBPBB IBBPBBPBBPBBPBB

The following diagram shows a closed GOP:



GOP size of 9
P distance of 2

The first and the last frame of each group is a so called intra frame or I-frame. I-frames consist of compressed data that reflects the entire video image without regard to previous or subsequent frames. If only I-frames were used, MPEG would be very similar to other compression formats such as MJPEG or DV.

What makes MPEG special compared to these are the other two frames types: P and B.

P-frames do not encode the entire image. Rather, they only contain the differences between the frame content and the previous I-frame. Think of a video clip where a car moves across a static background: a P-frame would only consist of the information “car has moved right”, since nothing else has changed from the previous I-frame. This is called a “motion compensation”.

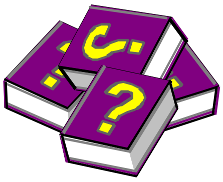
Since information about motion is a lot less data than re-encoding the entire image, a P-frame requires—on the average—only approximately 30% of the amount of data needed by an I-frame.

The B- or bi-directional frames are calculated from the previous and the following I- or P-frames - they make use of motion that happens backwards or forwards in time. Because of this, the B-frames require only 12.5 % of the amount of data needed by an I-frame.

MPEG takes - in contrast to less advanced codecs such as MJPEG or DV - advantage of the fact that many times, subsequent frames of a video are not all that different. This makes MPEG much more efficient, meaning less data to reach a given quality level.

The GOP structure in the MPEG2 AVI files used by DV500 is IPPP. Note that no B-frames are used within the AVI files, as this would make frame-accurate editing slow and cumbersome. But just by using P-frames instead of only I-frames, DV500 can reach a given quality level at only half the data rate that other editing systems need. Or, viewed another way, DV500 provides twice the video quality at a selected data rate - while still allowing edits at any arbitrary frame with full accuracy.

For the export of MPEG2 files, DV500 allows you to select the GOP structure that is most appropriate for your application: from I-frame-only up to IBP with a GOP length of 15 that are optimized for DVD or MPEG2-CD production.



Appendix B
Troubleshooting

GENERAL

Before you begin troubleshooting make sure of the following:

- You have any Operating System update for Windows NT.
- Ensure that all other installed hardware is functioning normally with the latest drivers, and is not flagged in device manager. If any devices are flagged you should resolve these issues before starting installation.
- Have you installed the DV500 into a PCI Rev 2.1 compliant computer?

PROBLEMS AND SOLUTIONS - GENERAL

Problems with having Premiere & DVTools open simultaneously.

You may experience intermittent operation or output using Instant Video in Premiere while DVTools is still open. Be sure to close DVTools when working in Premiere, or close Premiere while working with DVTools. You may also experience 1394 errors, or blue screen errors with both applications open. Both of these applications are making calls to the 1394 system, they cannot simultaneously access it correctly, therefore errors or unwanted symptoms may occur. If you do operate with both applications open, and receive errors you will have to restart your system to recover.

When scanning a DV tape, the DVTools does not work properly.

If several programs are working simultaneously, the performance may suffer.

Please check if other applications are active in your system.
Please close all programs and only use the DVTools during scanning.

The error message “Time code not found” appears.

Cause 1: The tape has not yet been used for recording video and has not had time code recorded to it.

Cause 2: Time codes may be lost in case of damaged tapes.

Please test if this problem also occurs with other tapes. Always use the kind of tape the manufacturer of your DV device recommends.

The scan process continues to be repeated.

Cause 1: There are drop outs on the DV tape. This may be due to damaged tapes or on some tape sections you did not record video.

Solution 1a: Please test if this problem occurs with every tape. Always use the kind of tape the manufacturer of your DV device recommends.

Solution 1b: In DVTools you can define a timeout for these blank tape sections. This avoids that scanning will be repeated as soon as a blank spot occurs on the tape.

—

Cause 2: There are no date and time entries on the DV tape.

Solution 2: Please ensure the date and time setting of your DV device. To do so, consult the manual that was supplied with your DV device.

Device control fails during tape scan or batch capture.

DV Tools uses time code information that is stored on you DV tapes. Please activate this time code function (TC) for you DV device. Make sure that the clock of your device is set and functioning.

We recommend stripping the DV tapes before shooting real footage. You can ”pre-format” the tape putting the camera into recording mode until the tape is full. Leave the lens covered. The tape will then contain continuous time code information and will work properly.

There are vertical black borders inside of the stored images.

Some DV camcorders do not generate a complete 720 pixel wide image. Some pixels are left black at the right and /or left border. To work with those images under Premiere you need to add a cropping filter to cut those lines and to stretch the image slightly to meet the DV format (720 pixels). Please refer to the Adobe Premiere User's Manual to learn more about using filters inside of Premiere.

You also can use the „Cropping format“ with a resolution of 704 pixels. Just load the corresponding preset under Premiere.

The system does not boot. The mouse movement is jerky.

DV devices may cause trouble during the initial driver start. Please disconnect these from the DV500 until after the boot process is complete. After Windows has booted you can connect the camcorder again. The camera will work fine.

Problems might occur with uploading video to the DV tape (recording the edited video back to the DV tape).

Cause 1: Only a few PAL camcorders currently support recording back to the device from the DV port. On most PAL camcorders it is not possible to upload digital video.

Cause 2: If your computer system is too slow, the system might abort the upload or the video quality may be very poor.

Please check to make sure that your system requirements are met using the DVExpert.

PROBLEMS WITH THE VIDEO DISPLAY ON THE PC SCREEN

In the DV500 settings dialog, I can switch between Overlay Surface and Primary Surface. What is the difference?

Different graphics adapters support different modes of displaying video. Choosing between Primary and Overlay Surface allows you to select a mode that works best for your particular graphics device.

In general, Primary Surface will work with more graphics adapters than Overlay Surface. However, Primary Surface has a number of restrictions:

- Primary Surface requires that the graphics board is set to 16, 24 or 32 bits per pixel color depth (high color or true color). It does not work with a setting of 8 bits per pixel (256 colors).
- Covering the video display with another window may sometimes result in stray pixels and should be avoided.
- Both fields of the video will get displayed on the PC screen. This may show as "feathering" and is due to the interlaced nature of the signal.

I cannot select Overlay Surface, only Primary Surface or None.

This is because your graphics adapter does not support Overlay Surface. If Primary Surface works, then this is not a disadvantage.

If you absolutely want to get Overlay Surface to work, you can try obtaining a new driver from the manufacturer of your graphics adapter.

I do not see any video on the PC screen, just a grey rectangle.

Try switching to Primary surface. If this does not help, check the color mode of your graphics adapter - it has to be set to 16, 24 or 32 bits per pixel (true color or high color). In some cases, switching to different resolutions and monitor refresh rates can help.

There is a video display on the PC screen, but it gets lost occasionally and I only see a gray rectangle.

This can be fixed by moving the window that contains the video image. Sometimes, switching the overlay mode between Primary and Overlay Surface also helps.

The video display on the PC screen shows flashing lines.

Your graphics adapter or PCI bus may have problems transfering all the data required for the video display.

Try switching to Overlay Surface or set your graphics board from 32 or 24 bits per pixel (true color) to 16 bits per pixel (high color).

When a window or menu is on top the video on my PC screen, I cannot see it, because the video covers it.

Try switching to Overlay Surface, if it is available. If not, then the only solution is to avoid placing other windows on top of the video display.

The video on my PC screen looks different from the video on my external monitor. The brightness and/or colors do not match.

This is quite normal, as the graphics adapter influences the displayed video. In addition, PC monitors use a different phosphorus coating that makes colors look different.

PROBLMS WITH INTERUPT SHARING

Interrupts (“IRQs”) are signals that inform the software about a request for service from the DV500 board. There are only a limited number of IRQ lines available in a PC and if many peripherals or add-in boards a present, these lines may not be sufficient. The PC will then start sharing IRQ lines among PCI boards.

This DV500 software version supports IRQ sharing. However, if the other device that DV500 is supposed to share its IRQ with does not support sharing, the DV500 will not function. This section explains how to solve problems around IRQ sharing.

Both capture and playback will not work in this case or will show unsatisfactory performance (only low data rates achievable, dropped frames).

Capture and/or playback do not work correctly. Frames are dropped or an error message appears that says the disk is full when it is not.

First, it is necessary to check if the DV500 interrupt is being shared with another device. This is done differently, depending on the operating system that you are using:

- **Windows 98 / ME**
  Open the *Control Panel* via the *Start* menu and Settings. Double-click on the *System* icon. In the window that opens, click on the tab labeled *Device Manager*. In the tree display, double-click on the *Computer* icon. Another window opens that lists all devices and their IRQ allocations. The DV500 will show as two separate devices (Overlay and E4) that use the same IRQ number. If any other device uses the same IRQ number, then this is a case of IRQ sharing.

- **Windows NT 4.0**
  Open the *Start* menu and select *Programs - Administrative Tools - Windows NT Diagnostics*. In the window that opens, click on the tab labeled *Resources*, then click on the *IRQ* button. The DV500 will show up as two separate devices with the name of "`lstone`" and both will use the same IRQ number. If any other device uses the same IRQ number, then this is a case of IRQ sharing.

- **Windows 2000**
  Right-click on the *My Computer* icon on the desktop and select the menu entry Manage. In the window that opens, select the item *Device Manager* in the tree display on the left. Open the *View* menu and choose *Resources by type*. Now locate the entry *Interrupt Request* (IRQ) in the tree on the right-hand side and click on the plus sign next to it. The DV500 will show as two separate devices (Overlay and E4) that use the same IRQ number. If any other device uses the same IRQ number, then this is a case of IRQ sharing.

If you see that IRQ sharing is taking place in your system, there a number of things you can try to get rid of it:

- Remove the other device from the system if you do not absolutely require it.
- Enter the mainboard BIOS setup program during bootup - this is usually done by pressing <Del> right after powering up the PC. Some setup programs allow you to swap IRQ allocation between PCI and ISA. Make sure that IRQs are set to *Reserved for ISA* only if this is necessary.
- IRQs usually get assigned depending on the slot number that PCI boards occupy. Moving or swapping the DC1000 board with other PCI boards sometimes resolves IRQ sharing problems. In some machines, PCI slot #1 works best for DC1000 IRQ assignment.

PROBLEMS WITH CAPTURE

There are two different resolutions when capturing: 720 and 704 (cropped). Which one should I use?

The cropped format is useful if your video source generates black bars on the sides of the video image - this is particulary the case with many DV camcorders. However, if your production target is DVD or MPEG-2-CD, choosing full size will avoid a lengthy and quality-impairing resize operation when exporting to an MP2 file.

When you import full-size and cropped AVIs into a Premiere project, the project settings determine the behavior of the clips. If the project is set to full size, any imported cropped clips will require rendering and will thus display a red bar above them in the timeline. Vice versa, if the project is set to cropped, all full-size clips will need to be rendered.

We recommend that you make a decision between cropped and full size before you start capturing for a particular project. Please make sure that the capture settings for the frame size match the project settings. If you want to use a clip that does not match the project settings, it may be advantageous to convert it to the appropriate format first. This can be done by exporting the clip to Pinnacle AVI

Stop motion and still frame capture do not work.

The DV500 hardware does not support these capture modes. To generate a still frame from a captured video clip, the Premiere export features can be used. For this, place the clip in the timeline and move the cursor to the frame that you want to export. Now select *Export* - Frame in the *File* menu.

When I capture, I always drop frames.

First, make sure that you capture onto a separate harddisk reserved solely for video. This drive needs to be set in *File, Preferences, Scratch Disks / Device Control*.

If this does not help, your harddisk may be too slow. You can use the HDExpert tool in the Pinnacle program group to check the speed of your harddisk.

Another cause for dropped frames may be interrupt sharing. See the section Problems with Interrupt Sharing for more information.

Finally, if the video source has unstable sync signals, some frames may be dropped, especially at scene changes. Cleaning the heads of your camcorder or VCR or using a timebase corrector may remedy this.

PROBLEMS WITH EDITING AND RENDERING

There is an annoying black vertical line on both sides of the video. On the video monitor connected to the DV500 video output, this is not visible. But I do see it with some effects like slides and picture-in-picture.

Many video sources (analog and DV camcorders) do not output the full ITU.R-601 resolution of 720 horizontal pixels. Instead, they produce black bars on both sides of the video.

Because of this, DV500 allows you to work with a “cropped” resolution, which uses 704 horizontal pixels. To use this mode, select an appropriate preset when starting Premiere. When you then capture, the cropped mode will be used.

Note that 720 and 704 clips should not be mixed in one project. See the section Problems with Capture for more information.

I put some effects in the timeline, but they do not play back. I just see black or a small red X.

DV500 supports transitions, titles, transparencies and filters in real-time, but there are limits to these capabilities. Only one real-time effect can be done at any point in time, layered effects like a title over a transition will require rendering. Titles will only be done in real-time if they are static (i.e. no motion was applied to them) and the key type is Alpha Channel, Black Alpha Matte or White Alpha Matte.

Anything that does not work in real-time needs to be rendered. This is a process where a new clip is calculated that contains the effect.

A section of the timeline that requires rendering will be indicated by a red line right below the work area bar in the timeline. The red film strip in the Instant Video RT also indicates that the clip has to be rendered.

During the playback of a clip that has to be rendered a red X on a white background in the upper left corner of the video appears.

Note that before you render this area, scrubbing and playing through it will show the uppermost video layer without the effect. The red X in the upper left corner reminds you that rendering is still required here. To preview the effect, you can render-scrub by holding down the <Alt> key while scrubbing.

To activate rendering for a particular area, set the work area so that it covers the red bar and press <Enter> or select *Project - Render Selection*. If you pressed <Enter>, the work area will play automatically after rendering is finished.

The film strip in the Instant Video RT window is red, but I cannot find the area that needs to be rendered.

Try one of the following solutions:

- Span the work area over the entire project and start rendering. This may be time-consuming, as all audio will also be rendered.
- Right-click on the Instant Video window and select *List to render*. A window will open that indicates the error condition and the frame count where it occurred. By now selecting Frames/Samples display in the Timeline Window Options, you can localize the place of the timeline where rendering is required.
- If you know what area you worked on before the film strip turned red, then just set the work area to this spot and render.

I have rendered the entire project, but the film strip in the Instant Video window is still red.

In rare cases, it is possible that the internal database management of Adobe Premiere and DV500 loses synchronization.

If you see effects where they do not belong or if Instant Video reports that everything has been rendered, but this is not the case, try the following: move the mouse cursor above the scrub bar while holding down <Shift>, <Ctrl> and <Alt> and click left once when the pointer turns into a trash can icon. This will delete all rendered effects and resynchronize the lists.

Scrubbing is slow and the screen takes a long time to update.

Scrubbing may be slow if you choose to display all thumbnails in the Track Format settings of the Timeline Window Options, as updating them takes a lot of time. The option Show Audio Waveforms also causes scrubbing performance to degrade.

I made a title with TitleDeko and it does not play back in real-time. It works fine once I render it.

Very complex titles with lots of transparency effects (e. g. the TitleDeko cloud style) may not play in real-time. They require rendering.

The SpiceRack wipes I select in the Pinnacle Gradient Wipe transition do not play back in real-time.

You must use SpiceRack images that match the video standard of the clips you are editing: PAL or NTSC. During installation, you were asked for your choice of video standard and only those SpiceRack images were copied to your harddisk. You can manually copy the images for the other video standard from the DV500 CD, they are located in the SpiceRack directory.

I have a number of favorite SpiceRack images that I use all the time. But I always forget in which directories they are.

You can copy or move the SpiceRack images with the Windows Explorer. You can also change the sames of the images without causing problems, as long as you do not change the extension (*.PNG).

Is it possible to do my own SpiceRack effects?

Yes, certainly. The Pinnacle Gradient Wipe effect will accept bitmaps in PNG or BMP format. However, the effect will only play in real-time if the image has a frame size that matches the current project settings and if its color depth is 8 bits per pixel.

I cannot add a keyframe when using the Pinnacle filters. I also cannot move the start and end keyframes.

Sorry, but Premiere currently does not support keyframes for hardware-accelerated filters.

To work around this limitation, use Premiere's razor tool and cut a clip into appropriate segments, applying the filter to the segments as required.

I want to use AVI clips from other sources than DV500 capture. Can I do this?

Yes, AVI clips of any format can be imported, as long as a suitable codec is installed. Note that these clips will require rendering before they can be played back on the DV500.

It may be advantageous to convert these AVI clips to the DV500 format before you use them in your project. To do this, place them into a blank timeline and then select *File*, *Export*, *Movie*. Click *Settings* and *Load* and then choose the appropriate Pinnacle AVI preset.

PROBLEMS WITH PLAYBACK AND OUTPUT

There is no audio when I play a project from the timeline or a clip from the source monitor.

All audio is output through the DV500 hardware, even during scrub operations. Please make sure to connect your speakers to the DV500 audio outputs to monitor the sound.

The level of the DV500 analog audio outputs may be set by right-clicking on the Instant Video RT window, choosing Settings and then the Output tab. The sliders here set the maximum output level. Audio can then be attenuated or muted by clicking on the speaker button in the Adobe Premiere monitor window.

The Premiere manual says that I can double- or triple-click on the play buttons in the monitor to play faster, but this does not work.

Fast and backward playback with a double-/triple- or <Alt>-click on the monitor play button will not work on DV500, as the MPEG data structure and limitations of the speed of the hardware codec prevent this.

Try these workarounds:

- To quickly scan through video on the timeline, click and hold the frame forward/reverse buttons in the Monitor window. By pressing and releasing <Shift> while you do this, you can switch from moving by single frames to moving in steps of five frames.
- To modify the playback speed of a clip in the timeline, right-click it and select Speed. Note that this effect will require rendering.

I am using Print to tape on a Premiere sequence. The playback is not seamless.

The sequence feature of Premiere does not use the DV500 hardware for playback and you will thus see a short pause between the clips.

I am ready to output my project to tape. What is the best way to do this?

We recommend that you output your project to tape directly from the timeline, as this will allow you to see dropped frames, which are reported in the status line of the Instant Vide window. Make sure that all non-real-time effects have been rendered—this is indicated by a green film strip.

There are always color bars on the video monitor connected to the DV500 output.

In Premiere, right-click on the Instant Video window and select *Settings* in the menu that pops up. Click on the tab labeled *Output* and check the box called *Test Picture.* Make sure that it is turned off.

I am using the Print to video command to output to tape, but some features do not seem to work.

If you want to use the Premiere Print to video command, please note the following restrictions:

- There is no report on dropped frames during playback.
- The options “Zoom by two”, “Full screen”, “Color bars” and “Black” have no effect on the analog output, only on the display on the PC monitor.
- “Zoom by two” will not work if the overlay mode is set to primary surface.
- Make sure to render your entire project before starting Print to video. If you start Print to video while still having unrendered effects in your project, Premiere will render them - and also render all real-time effects that normally do not need to be rendered.
- Occasionally, the video on the PC screen will play back behind the Premiere window. You can bring it to the front by pressing <Alt>-<Tab>.
- You can abort a Print to video operation by pressing <Esc>.

I want to send my project to my DV device. Can I use device control to start recording automatically?

Yes. Select *File*, *Export to tap*e to do this.

Can I export just the audio of a project?

Yes, please select *File - Export -Audio* to do this. Make sure that the file type is set to Windows Waveform.

How to I output a file format for the internet?

There are many ways to do this, this is the simplest: first, export a DV500 AVI file. To do this, select *File*, *Export*, *Movie*. Click on *Settings* and then on Load and select the appropriate Pinnacle AVI preset.

The AVI file that will be generated now can be imported into a number of popular web streaming applications that will convert it to a format suitable for the internet.

PROBLEMS AND SOLUTIONS—PINNACLE FREEFX

FreeFX does not appear in the Premiere transitions list.

Solutions: Check if you are using Premiere 5.1a or later. Premiere 4.2 is not supported, 5.0 or 5.1 should not be used.

Check if the Premiere plug-ins directory includes the files FX-FreeFX.prm, FX-FreeFX.ini, and the directory Pinnacle-FreeFX. If any of these items is missing, FreeFX is not installed properly. Try to install it again.

If all required files are there, and if FreeFX was once shown in the Premiere transitions list but is no longer there, you need to close Premiere and delete the Premiere preferences file Prem50.prf in the Premiere directory.

There are error messages when starting Premiere or when opening the FreeFX dialog.

Check if you have installed Microsoft DirectX 7.0 or later. This is required for FreeFX to work.

Set the hardware compatibility slider in the hardware dialog to the lowest setting, named 'No 3D hardware acceleration'. This will fix any problems which are caused by limitations or bugs of the VGA 3D acceleration hardware or drivers.

Some of the effects look bad and wrong, while others are ok.

Turn off the 'Use 3D hardware to render' checkmark for all effects on the timeline that look bad.

I have turned on hardware acceleration, but the FreeFX dialog shows "software rendering".

FreeFX automatically uses software rendering if there is insufficient offscreen memory on the VGA board. Try switching to a lower screen resolution and color depth, closing any video windows that are not currently required, and start Premiere again.

A big "Pinnacle demo" logo is shown on every frame.

This indicates that you use FreeFX without any of the compatible Pinnacle video editing boards.

The FreeFX transitions are marked red on the timeline and do not play in real-time.

This is right, unlike the no-render real-time wipes, titles and filters that DV500 and DC1000 support, FreeFX transitions are being rendered.

I had to turn off hardware acceleration to get proper results - but I want more speed.

Some VGA boards are simply not capable to accelerate FreeFX, including all VGA boards with no 3D acceleration at all or less than 8MB of memory. If your VGA has 8MB or more, you should try using the latest drivers. For more information visit our FreeFX-Website under **`http://www.pinnaclesys.com/freefx`**.

PROBLEMS AND SOLUTIONS - AFTER EFFECTS

Can I use After Effects with DV500?

Yes, using the 1.2 drivers DV500 fully supports After Effects.

You can use DV500 AVIs as part of After Effects projects, you can export After Effects projects into DV500 AVIs, and you can play these AVIs directly from the Premiere timeline to tape.

We have created some After Effects setting files for use with DV500, they can be found in the **`AfterEffects`** directory. Please use the appropriate setting file to make sure that all settings are correct.

OTHER PROBLEMS AND LIMITATIONS

I am trying to capture a very long clip, but capture stops after about twenty minutes.

Windows 98 uses the FAT32 file system and this limits the maximum size of a file to 4 GBytes. With a data rate of 25 MBit/sec, this amounts to about twenty minutes. Capture will automatically stop after this time.

Windows NT 4.0 and Windows 2000 feature the new NTFS file system with a maximum file size of 12 TBytes.

The Pinnacle Systems Control tool in the Windows control panel does not seem to have any effect.

The settings of the DV500 Control Tool in the Control Panels only affects applications that do not have their own DV500 settings (e. g. Media Player, Adobe AfterEffects etc.). It has no influence on Adobe Premiere.

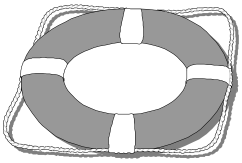
To change the parameters of the DV500 hardware in Adobe Premiere, use the *Capture Settings* and/or the *Output Settings*. The latter dialog is activated by right-clicking on the Instant Video RT window and choosing *Settings*. Note that some options, like the overlay mode, are global in nature and will thus be the same for all applications that use DV500, no matter where you set them.

I like to change the gray texture background of the DV500 settings.

Open any DV500 settings dialog and click on the Pinnacle icon in the upper left corner. Select *About* in the menu that appears. The *About* box has an option to turn off the texture.

PROBLEMS WITH THE COMPATIBILITY OF VIDEO DEVICES

Visit us on our home page under `http://www.pinnaclesys.com` and have a look at the compatibility list.



Appendix C:
Error Messages

The following messages occur when some part of the timeline cannot be played in real-time. All of these can of course always be resolved by rendering, but in some cases, you may choose to modify your project to maintain real-time playability.

Alpha Overflow Error

Alpha stream for effects control has exceeded maximum allowable size or cannot be calculated in real-time.

If caused by a gradient wipe, try turning off the border—or use the Premiere RT gradient wipe transition and render. If caused by a bitmap or a title in the superimposition map, then the image/title is too complex, try making it simpler—or render.

Media Too Complex

A title or a gradient bitmap is too complex to be done in real-time. Either render it or—in case of a title—try to make it less complex by using less characters and/or another style.

Too Many Media

There are not enough data transfer channels to carry the media contents to the effects hardware.

The effects combination cannot be done in real-time and needs rendering or simplification by limiting the tracks with simultaneous video to two.

Too Many FX

There are not enough effect devices to do the requested effect stack.

The effects combination cannot be done in real-time and needs rendering or simplification (e. g. title and transition simultaneously, filter and title simultaneously etc.).

Item Needs Rendering

This media is not supported by the underlying RAL/hardware. Could be resolution, frame rate or similar that the hardware does not support. This may be intentional and if it is, rendering of the clip is required.

Appendix D:
Multimedia Terminology

GLOSSARY

Multimedia terminology contains computer and video terminology. The most important terms are defined in the following.

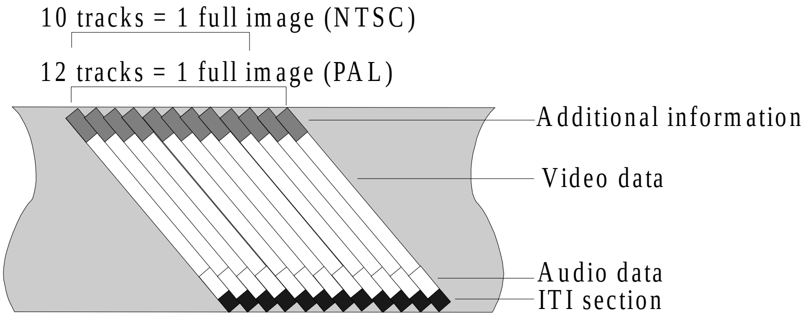
Cross references are marked with 🕮.

ActiveMovie	Software interface by Microsoft for the control of multimedia devices under Windows. 🕮 DirectShow, DirectMedia
Adress	All available saving positions in a computer are numbered (adressed). By means of these adresses each saving position can be occupied. Some adresses are reserved for special hardware components and may not be used any longer. If two hardware components are using the same adress, this is called "adress conflict".
Aliasing	An inaccurate display of an image due to the limitations of the output device. Aliasing appears for example in the form of jagged edges.
Anti-aliasing	A method of smoothing out jagged edges in images.
Aspect ratio	The ratio of width to height in an image or graphic. Keeping the aspect ratio means any change to one value is immediately reflected in the other.
AVI	Abbreviation for Audio Video Interleaved, standard format for digital video (🕮 Video for Windows).
Batch Capture	This feature permits the user to specify which parts of a tape are to be digitalized. The required clip is then controlled and digitalized automatically by remote control of the camcorder / videorecorder.
Betacam	Broadcast quality 1/2 inch video cassette format developed by Sony. This system has continued to be developed over the years to offer models for the industrial and professional markets.
BIOS	**B**asic **I**nput **O**utput **S**ystem. Amongst others, settings in the BIOS setup must be performed for the function of a video board. In most cases, this setup may be activated directly by pressing the F1 key once the computer has been switched on.
Bit	**Bi**nary Digi**t**. The smallest information unit in a computer. A bit may be used to illustrate two conditions, “0“ and “1“, two bits thus 2^2=4 and three bits 2^3=8, etc.
Bitmap	An image format made up of a collection of dots or “pixels” arranged in rows.
Blacking	The process of preparing a videotape for insert editing by recording video black and continuous control track on the entire tape. If the recording deck supports time code, then continuous time code will be recorded simultaneously.

Black and white	An image that contains only black and white pixels.
BMP	File extension for 🕮 bitmap files.
Brightness	Also “luminance”. Indicates the brightness of a video.
Byte	One byte corresponds to eight 🕮 bit. With one byte, exactly one character can be displayed (i.e. letter, number). The encoding is binary, this means in “zeros”" (0) and “ones” (1).
CD-ROM	CD-ROMs are mass storage media for digital data, such as digital video.
Channel	Classifications of information in a data file to isolate a particular aspect of the entire file. For example, color images use different channels to classify the color components in the image. Stereo audio files use channels to identify the sounds intended for the left and right speakers. Video files use combinations of the channels used for image and audio files.
Chrominance	Color
Chroma	That quality of colors which embraces both hue and saturation. White, black, and grays have no chroma.
Clip	Any media type that goes on the Storyboard or Timeline. Can be video imges, video scenes, images, or audio files.
Clipboard	A temporary storage area shared by all Windows programs used to hold data during cut, copy, and paste operations. Any new data you place onto the clipboard immediately replaces the existing data.
Clock frequency	Rate at which individual commands are processed in a processor. The higher the clock frequency, the quicker the commands are processed.
Closed GOP	🕮 GOP
CODEC	Abbreviation for Compressor/Decompressor, compresses (packs) and decompresses (unpacks) image data. There are different compression methods (software CODECs and hardware CODECs).
Color depth	Number of bits delivering the color information for each pixel. In the black-and-white operation 1-bit color depth means 2^1=2 colors, 8-bit color depth supply 2^8=256 colors, 24-bit color depth 16,777,216 =2^{24} colors.
Color model	A color model is a way to mathematically describe and define colors and the way they relate to each other. Each color models has a specific purpose; the two most common color models are RGB and YUV
Color saturation	Intensity of a color.
Complementary Color	Complementary colors are opposite in value to primary colors. If you were to combine a color with its compliment, the result would be white. For example, the complimentary colors of red, green, and blue are cyan, magenta, and yellow respectively.
COM Port	A serial port located on the back of your computer for attaching modem, plotter, printer, or mouse to a system.
Composite video	In composite video signals, luminance and chrominance signals are mixed. In comparison to S-Video or component signals, this results in reduced quality. 🕮 VHS and 🕮 Video8 are formats which record and playback composite video. 🕮 S-VHS

Compression	A method for making files smaller in size on disk. There are two types of compression: lossless and lossy. Files compressed with a lossless scheme can be restored to their original state with no change to their original data. Lossy schemes discard data during compression, so the file, when reopened is slightly different.
Cropping	Many video sources produce image interference, e.g. black stripes at the edge of the picture that cannot be seen on the television. This interference may be visible with video effects or when outputting e.g. on DVD. Cropping avoids these problems by cutting off the outer edge of the picture during digitalization.
Cut	A cut is the switch from one camera angle to another.
Data rate	Data per second, i.e. amount of data which a mass storage medium (hard disk or CD-ROM) saves/plays back per second or the amount of data of a video sequence per second.
Data transfer rate	The measurement of the speed at which information passes between storage mediums, (ex. CD ROM or Hard Disk), and the display device, (ex. Monitor or MCI device). Depending on the devices used, some transfer rates may offer better performance than others.
DCT	Abbreviation for Discreet Cosine Transformation. Part of the most image data compression methods. The brightness and color information is saved as frequency coefficient.
Decibel	A unit of sound measurement that expresses the loudness of sound.
Digital8	Digital videotape format which records DV-coded audio and video data on Hi8 tapes. Currently sold only by Sony, Digital8 camcorders/VCRs can play Hi8 and 8mm cassettes.
Digital video	Digital video stores information bit by bit in a file (in contrast to analog storage media).
DirectMedia	System extension by Microsoft for multimedia application under Windows. 🕮 ActiveMovie.
DirectShow	System extension by Microsoft for multimedia applications under Windows. 🕮 ActiveMovie.
DirectX	**Direct** E**x**tensions is a bundle of several system extensions developed by Microsoft for Windows (amoung others DirectDraw, Direct3D) to make possible video and game accelleration.
Dissolve	A transitional effect in which the video is faded from one scene to the next.
DMA	Abbreviation for **D**irect **M**emory **A**ccess. This permits large volumes of data, e.g. video data, to be transmitted especially quickly in a computer system.
Driver	A file containing information needed to operate peripherals. The capture driver operates the capture board, for example.
DV	Digital videotape format for recording digital audio and video on ¼”-wide Metal Evaporated tape. Mini DV tapes hold up to 60 minutes of content, while standard DV tapes can hold up to 270 minutes of content.

DV cassette	The DV cassette features 500 lines of 🕮 resolution, component recording, 🕮 signal-to-noise ratios (54dB) better than 🕮 Betacam, three times the 🕮 chroma bandwidth of 🕮 Hi8 and 🕮 S-VHS (1.5MHz, the same as Betacam), 🕮 time code, 16-bit quality audio (or four tracks of 12-bit, 32kHz), separate video and audio insert editing, and direct digital input and output based on 🕮 IEEE-1394 for multiple video-stream transfers and editing with no generation loss.
DV recording format	On DV tapes, the video and audio data, the additional information (index signals, time codes, etc.) and the ITI section (ITI= insert and track information) are written to the DV tape as follows.


10 tracks = 1 full image (NTSC)
12 tracks = 1 full image (PAL)
Additional information
Video data
Audio data
ITI section

Recording format of a DV tape

Edit decision list (EDL)	A list of clips and effects in a particular order in which they will be recorded onto your output tape or AVI file.
Fade To/From Black	A digital effect that fades up from black at the beginning the clip or down to black at the end of the clip.
Field	A frame of video consists of horizontal lines and is divided into two fields. All odd lines of a video frame are Field 1. All even-numbered lines are Field 2.
File format	The ways in which a computer stores images or information on a disk.
Filters	Tools that alter data to produce special effects, e.g. changing contrast or color.
FireWire	Apple Computer’s trademarked name for the IEEE-1394 serial data protocol.
Frame	A single image in a video or animation sequence. If using full NTSC or PAL resolution, one frame consists of two interlaced fields.
Frame rate	Frame rate defines how many frames of a video sequence are played in one second. The Frame rate for NTSC video is about 30 frames per second. The frame rate for PAL video is 25 frames per second.)
Frequency	A number of periodically recurring processes (i.e. sound signals, images, alternating voltage per unit of time, normally per second (Hertz).
GOP	In 🕮 MPEG compression the data stream is divided into different sections first, the so called **GOPs** (**G**roup **o**f **P**ictures), each containing several frames. One GOP contains three types of frames: **I-Frames**, **P-Frames** and **B-Frames**.

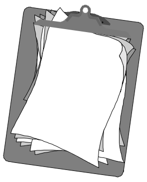
GOP size	The GOP size defines, how many I-, B-, or P-Frames (pictures) are included in one 🕮 GOP. Current GOP sizes are for example 9 or 12.
Hardware CODEC	Compression method which creates compressed digital video sequences. These video sequences use special additional hardware to be recorded/played back and usually offer a better speed than data compressed with software CODECs.
Hi8	Improved version of Video8 using S-Video recorded on Metal Particle or Metal Evaporated tape. Because of higher luminance resolution and wider bandwidth, the result is sharper pictures than Video8.
HiColor	For images, this normally means a 16-bit (5-6-5) data type that can contain up to 65,536 colors. TGA file formats support images of this type. Other file formats require prior conversion of a HiColor image into True Color. For displays, HiColor normally refers to 15-bit (5-5-5) display adapters that can display up to 32,768 colors.
Hue	Differentiation of colors with terms like red, yellow, orange.
Huffman-Coding	Part of the image data compression procedure. seldom occurring values receive a long code, while constantly-occurring values receive a short code.
IDE	Acronym for **I**ntegrated **D**evice **E**lectronics. An interface, e.g. for hard disks and CD drives. Modern IDE variants achieve speeds similar to 🕮 SCSI.
IEEE-1394	IEEE-1394 – sometimes referred to as 🕮 FireWire® or i.LINK – is an international standard digital interface completed in 1995 by the IEEE. IEEE-1394 integrates entertainment, communication, and computing electronics into consumer multimedia. In general, IEEE-1394 is: ♦ A hardware and software standard for transporting data at 100, 200, or 400 megabits per second. ♦ A digital interface allowing a seamless connection between computer and peripherals – there is no need to convert digital data into analog. ♦ “Hot pluggable” – users can add or remove 1394 devices with the bus active.
Image	In technical terminology, an image is a collection of dots (pixels) on the screen. In this case, the term is used to describe digitized pictures, consisting of pixels, which can be shown on a computer display and manipulated by image enhancement software.
Image compression	Method to reduce the amount of data of digital image and video files.
Insert cut	In an insert cut, an individual clip is copied into a longer one.
Interlaced	Interlaced describes the refresh method which the PAL and other TV systems use: The PAL TV image consists of two image halves (fields) of 312½ lines each. The NTSC TV image consists of two image halves of 242½ lines each.
Interleave	An arrangement of audio and video to promote smoother playback and synchronization or compression. The standard AVI format equally spaces audio and video.
I/O	Abbeviation for Input/Output.

Irrelevance	Irrelevant (unimportant) information can be eliminated during the image data compression, since the human eye does not realize that this information is missing.
IRQ	**I**nterrupt **Req**uest. Interrupt in a running process of the computer. Interrupts can be requested both by the hardware (i.e. keyboard, mouse) and the software.
ITI	**I**nsert & **T**rack **I**nformation. Information that is saved on the digital videotape by means of 🕮 insert cuts and tracks.
JPEG	Abbreviation for Joint Photographic Experts Group. Also refers to a standard for compressing digital frames based on Discrete Cosine Transformation.
KByte	One KByte (Kilobyte) corresponds to 1024 🕮 Byte. The “K” in this case stands for the number “1024”.
Key color	A color made transparent so that a background image can show through. Most commonly used when overlaying one video sequence on top of another, allowing the underlying video to display wherever the key color appears.
Key frame rate	A method to help in the compression of video files, which works by assigning certain frames as key frames whose video data is completely saved at the time of compression. The video data of any intervening frames between two key frames is then only partially saved. On decompression these partial frames reconstruct their data from the key frames (e.g. MPEG).
Laser disk	Medium which stores analog video. Information on laser disks can only be read, but not changed.
Long shots	Long shots later provide the viewer with an overview and establish the scene of the action. However, these scenes can also be used later to shorten longer scenes. When you cut from a close-up to a long shot, the viewer no longer sees the details and it is thus easier to make a chronological jump. Showing a spectator in a semi-long shot can also distract briefly from the actual action.
LPT	🕮 Parallel port
Luminance	🕮 Brightness
M1V	MPEG file that contains video data only. 🕮 MPA, MPG
MByte	One MByte (Megabyte) corresponds to 1024 🕮 KBytes or also 1024 x 1024 bytes.
Mark In / Mark Out	If just a part of a video clip in a project is to be used, this part is identified by mark in and mark out times.
MCI	Media Control Interface. Developed by Microsoft as a means to play audio and video data. It is also used to connect a computer to an external video source such as a VCR or laser disc.
Modulation	A method for the transmission of electrical information.
Motion-JPEG (M-JPEG)	Format for JPEG-compressed video sequences.
MPA	MPEG file that contains audio data only. 🕮 M1V, MPG

MPEG	Abbreviation for **M**otion **P**ictures **E**xperts **G**roup. Standard for the compression of moving images. Compared to M-JPEG, it offers 75-80% data reduction with the same visual quality.
MPG	MPEG file that contains both video and audio data. 🕮 M1V, MPA
MPV	MPEG file that contains video data only. 🕮 MPA, MPG
Non-interlaced	Image refresh method, where the complete image is generated without skipping lines. A non-interlaced image (like your computer monitor) flickers much less than an interlaced image (like your TV).
NTSC	Abbreviation for **N**ational **T**elevision **S**tandards **C**ommittee; also, a color TV standard created by this group in 1951 using 525 lines and 60 image fields per second. NTSC is used in North and Central America as well as other countries.
OpenGL	Abbreviation for **open g**raphics **l**ibrary (= system open graphics library). Application interface for 3D graphics developed by Silicon Graphics that can be used under Windows.
PAL	Abbreviation for **P**hase **A**lternation **L**ine. Color TV standard developed in Germany using 625 lines and 50 image fields per second. It is the predominant European TV standard.
Parallel port	By the parallel port data is transmitted via 8 data lines. This means that 8 🕮 bit (1 🕮 byte) can be transmitted at the same time. This kind of transmission is much faster than via a 🕮 serial port, but it is very sensitive over long distances. Parallel ports of a PC are indicated with LPT and a number (i.e. LPT1).
PCI bus	**P**eripheral **C**omponent **I**nterconnect. Local Bus concept by Intel: 32-bit bus, a PCI bus can transfer 132 MByte per second (max.) at a 🕮 clock frequency of 33 Mhz. (🕮 PCI slot)
PCI slot	There are two kinds of expansion slots on most PCs: PCI and ISA. PCI slots are usually made of white plastic and are much smaller than ISA slots.
Pixel	Abbreviation for *picture element*. Pixels are the smallest elements of a monitor image.
Port	Electrical transfer point for the adaption of audio, video or control data between two devices. 🕮 serial port, parallel port
Prime colors	The colors that are the basis of the RGB color model: red, green, and blue. By varying how these colors are blended on screen, it is possible to create any other color.
QSIF	**Q**uarter **S**tandard **I**mage **F**ormat. 🕮 MPEG I format describing the resolution which is 176 x 144 under PAL and 176 x 120 under NTSC. 🕮 SIF
Quantization	Part of the image data compression. Relevant details are represented precisely, less relevant details for the human eye are represented with less precision.
RAM	**R**andom **A**ccess **M**emory. A RAM component is a write-read component from which data can be read and to which data can be written. The memory of computers is equipped with RAM components. RAM components are volatile, that is their content will be deleted after the computer has been switched off.

Redundance	Redundant (superfluous) information can be eliminated during the image compression. During decompression the images can be restored completely.
Registry	A database in Windows in which configuration data is stored. Among other things, the registry contains: the Windows system settings, the configuration data for Windows compatible applications, and user-specific configuration data.
Resolution	The number of pixels which can be displayed on the monitor horizontally and vertically. The higher the resolution, the more details can be displayed.
RGB	Abbreviation for Red, Green and Blue, the basic colors of additive color mixing. RGB describes the method used in computer technology where image information is transferred by dividing it into the three basic colors.
ROM	Abbreviation for **R**ead **O**nly **M**emory. Memory chip that keeps it's data without power suppy after beeing programmed once.
Run Length Encoding	The RLE = **R**un **L**ength **E**ncoding method is part of many image data compression methods. Repeating values are not saved individually but encoded by a counter, which states how often the values occurs in succession.
Scaling	Adaptation to the desired image size.
SCSI	Abbreviation for Small Computers System Interface. SCSI is used as hard disk interface for high-performance PCs because of its high data rate.
SCSI-ID	A number that identifies a SCSI device which is connected to a 🕮 SCSI host adapter.
SCSI host adapter	Normally, a SCSI host adapter is a supplement board which connects the computer (host) and the SCSI bus.
SCSI terminator	Electrical circuit at the end of a cable which prevents the reflection of electrical signals. Each SCSI bus (only) needs two terminators. The terminators have to be fixed at the outermost ends of the SCSI cables and not in the middle of a bus.
SECAM	Abbreviation for **S**equential **C**ouleur à **M**émoire. Color television transmission system used in France and Eastern Europe developed on the basis of the PAL system operating with 625 lines and 50 image halves per second.
Serial port	By the parallel port data is transmitted via one data line. This means that during a transmission of 8 🕮 bit (1 🕮 byte) these bits have to be transmitted one after the other. Thus, this kind of transmission is much slower than via a 🕮 parallel port. Serial ports in a PC are indicated with COM and a number (i.e. COM2).
SIF	**S**tandard **I**mage **F**ormat. 🕮 MPEG I format describing the resolution which is 352 x 288 under PAL and 352 x 240 under NTSC. 🕮 QSIF
Signal-to-noise ratio	The ratio of noise to good signal (picture) information usually expressed in dB.
Single frame	A single frame is part of a series or sequence. When this series is watched with enough speed, a "moving picture" is be created.
Software CODEC	Compression method to compress digital video sequences which can be played back without special hardware. The quality of these sequences depends on the performance of the complete system.

S-VHS	Improved version of VHS using S-Video and Metal Particle tape to deliver higher luminance resolution, resulting in sharper pictures than VHS.
S-Video	With S-Video (Y/C) signals, the brightness (luminance or “Y”) and the color (chrominance or “C”) information are transferred separately using multiple wires, avoiding modulating and demodulating the video and the resulting loss of picture quality.
Time Code	The time code identifies the position of a frame in a video sequence with respect to a starting point, (usually, the beginning of the clip). Its usual form is Hours:Minutes:Seconds:Frames (e.g., 01:22:13:21). Unlike a tape counter (which can be “zeroed” or reset at any point in a tape), time code is an electronic signal written on a videotape, and is permanent once it is assigned.
Transition	Transitions divert the viewer’s attention from the actual action, enabling filmmakers to make chronological jumps, for example, without the viewer being conscious of them.
TrueColor	An image that contains enough color to appear “true” to life. For an image, this normally means 24-bit color, providing up to 16.7 million colors.
VCR	Abbreviation for **V**ideo**c**assette **R**ecorder.
VHS	Abbreviation for **V**ideo **H**ome **S**ystem. System commonly used for home VCRs to record and play back images and sound using a 1/2" tape. VHS systems use & composite signals consisting of brightness and color information.
Video8	Video system using a 8 mm tape. Video8 recorders generate composite signals.
Video CD	CD-ROM standard with 🕮 MPEG compressed videos.
Video decoder	Converts digital video information into analog signals.
Video encoder	Converts analog video signals into digital information.
Video for Windows	Video for Windows is a Microsoft Windows system extension which records, stores and plays back video sequences from hard disk (digital video).
VISCA	A protocol used by several devices for controlling external video sources from computers.
Video scan rate	Frequency with which the video signal is scanned onto an image display. The higher the video scan rate the higher the image quality and the less noticeable the flicker.
Wav	File format for audio signals, generally also the file extension for audio files (*.wav).
White balance	In an electronic camera the amplifiers for the three color channels red, green, and blue are adapted to each other in a way that white image parts of a scene are played without color cast and thus all colors within the color area of the TV are played correctly.
Y/C	Y/C is a signal consisting of two components: Y = Brightness information, C = Color information.
YUV	Color model of a video signal where Y delivers the brightness information and U and V the color information.



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Anbieter / Supplier : **Pinnacle Systems GmbH**

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Germany

Produkt / Product : Pinnacle Systems **DV500**

Das oben beschriebene Produkt ist konform mit:
The product described above is in conformity with:

Dokument-Nr. / Document No	Titel / Title	Ausgabe/-datum / Edition/Date of issue
EN 55022 : 1994 + Corrigendum : 1997 + A1 : 1995 + A2 : 1997 Class B	Grenzwerte und Messverfahren für Funkentstörungen von Einrichtungen der Informationstechnik Limits and methods of measurement of radio interference characteristics of information technology equipment	1994 ; 1995 ; 1997
EN 50082-1:1997-08	Elektromagnetische Verträglichkeit (EMV) Fachgrundnorm Störfestigkeit Teil 1 Electromagnetic compatibility (EMC) Generic Immunity Standard Part 1	08/1997
EN 61000-4-2 : 1995 + A1 : 1998	EMV Teil 4: Prüf- und Meßverfahren EMC Part 4: Testing and measurement techniques	1995 ; 1998
EN 61000-4-3 : 1996 + A1 : 1998	EMV Teil 4: Prüf- und Meßverfahren EMC Part 4: Testing and measurement techniques	1996 ; 1998
EN 61000-4-4 : 1995	EMV Teil 4: Prüf- und Meßverfahren EMC Part 4: Testing and measurement techniques	1995
EN 61000-4-6 : 1996	EMV Teil 4: Prüf- und Meßverfahren EMC Part 4: Testing and measurement techniques	1996
ENV 50204 : 1995	Störfestigkeit gegen hochfrequente elektromagnetische Felder von digitalen Funktelefonen Radiated electromagnetic field from digital radio telephones - Immunity test	1995

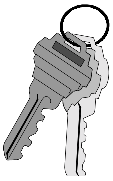
Dieser Erklärung liegt zugrunde: Prüfbericht(e) des EMV-Prüflabors
This certification is based on: Test report(s) generated by EMI-test laboratory

Braunschweig, 20. August 1999 / August 20th, 1999

Oliver Hoheisel
Entwicklungsleiter / Engineering Manager

Georg Blinn
Geschäftsführer / Managing Director
(Rechtsverbindliche Unterschrift / Legally binding)

NOTES



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